المراجعة رقم (1)

الترم الثانى







Final Revision

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(1) Write the scientific term :

1)	It is an electric current with constant intensity and flows in one direction through the electric circuit.	(..............................)
2)	They are ductless glands that secrete their hormones directly in the blood.	(..............................)
3)	The hereditary trait that appear in all individuals of the first generation in Mendel's experiments.	(..............................)
4)	Flowing of the negative charges (electrons) in a conductor.	(..............................)
5)	A chemical process which decreases oxygen percentage in the substance	(..............................)
6)	Used in some electric circuits to control current intensity as the resistance directly proportional with the length of wire.	(..............................)
7)	The opposition that the electric current faces during its flow in the conductor.	(..............................)
8)	The change in the concentration of the reactants and the products in a unit time.	(..............................)
9)	A chemical message that controls and regulates activities and functions of most of the body organs.	(..............................)
10)	It is the quantity of electricity in coulomb or the electric charges flowing through a cross-section of the conductor in one second .	(..............................)
11)	The enzyme which is found in sweet potato and accelerates the decomposition rate of hydrogen peroxide	(..............................)
12)	The metallic can exists in most modern cars to treat the harmful gases emitted from the engine.	(..............................)
13)	The charge transferred by a constant current of intensity of one ampere in one second.	(..............................)
14)	A substance which changes the rate of chemical reaction without being changed.	(..............................)
15)	They are chemical substance produced by the body of living organism act as catalysts that increase the speed of biological reactions.	(..............................)
16)	The measuring unit for absorbed nuclear radiation.	(..............................)

17)	The breaking up of bonds in reactants molecules and formation of a new bonds in the products molecules in the reaction.	(..............................)
18)	It is value of the work done to transfer a quantity of electric charges of one coulomb between the two poles of this conductor	(..............................)
19)	The hereditary traits are not be transmitted from one generation the another.	(..............................)
20)	The reaction between an acid and an alkali to give salt and water	(..............................)
21)	The resistance of a conductor which allows passing of an electric current intensity of one ampere when the potential difference across its terminals is one volt.	(..............................)
22)	The cells which the hormones affect and they are almost located away from the endocrine gland that secrets hormone.	(..............................)
23)	A disease caused as a result of decreasing the secretion of the growth hormone at the childhood	(..............................)
24)	Trait that disappeared in the first generation.	(..............................)
25)	The individual who carries a similar pair of hereditary genes whether the genetic pair is dominant or recessive	(..............................)
26)	The science that researches in the similarities and difference between the individuals in the same species	(..............................)
27)	The hormone which is responsible for the appearance of the male secondary sex characteristics	(..............................)
28)	It is the state of an electric conductor that shows the transfer of the electricity from or to it, when it is connected to another conductor.	(..............................)
29)	An arrangement of the metals elements in a descending order according to their chemical activity.	(..............................)
30)	The potential difference between the two poles of the battery when the electric circuit is open.	(..............................)
31)	The hormone which secreted from the pituitary gland to controls the speed rate of growth of muscles and bones.	(..............................)
32)	The individual who carries two genetic factors one of the dominant trait and the other of the recessive trait.	(..............................)
33)	Organs secrete hormones directly in the blood stream.	(..............................)
34)	The flow of electric negative charges through a conducting material.	(..............................)
35)	Chemical reactions in which an element substitutes another one.	(..............................)

36)	The appearance of a hereditary trait in the individuals of the first generation when two individuals are crossed over, one of them carries a pure trait contrasting the trait carried by the other individual	(..........................)
37)	A chemical substance that controls and regulates the functions of the most body organs.	(..........................)
38)	A disease that occurs due to the increase in the secretion of the thyroxin hormone.	(..........................)
39)	They are parts of DNA on the chromosomes and control the hereditary traits of the individual.	(..........................)
40)	A chemical process which increase oxygen percentage in the substance.	(..........................)
41)	Through which the hereditary traits are transmitted from parents to offspring.	(..........................)
42)	Chemical reactions in which a catalyst speeds up their rate.	(..........................)
43)	It is a reaction where double substitution occurs between the ions of two compounds to form two new compounds.	(..........................)
44)	The substance which loses one or more electrons in a chemical reaction.	(..........................)
45)	The type of the chemical reaction which involves the breaking up of the compound into simple elements by the effect of heat	(..........................)
46)	The process of spontaneous decaying of atoms nuclei of some radioactive elements that are present in nature.	(..........................)
47)	The electric current that is produced from convert mechanical energy into electric energy by means of the dynamo.	(..........................)
48)	The result when one of the endocrine glands does not work properly.	(..........................)
49)	Chemical compound which is resulted from the reaction of acid with alkali.	(..........................)
50)	Hormone is responsible for female secondary sex character.	(..........................)
51)	A chemical process in which the atom loses an electron or more.	(..........................)
52)	The trait that appears in all individuals of the first generation in Mendel's experiment.	(..........................)
53)	A device that is used to measure the electromotive force	(..........................)

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✸(2) Choose the right answer:

1.Direct current can be produced from ....

a. electrochemical cells. b. electric generators. c. electric power stations.

2.The reaction of oil with caustic soda is one of the .... reactions.

a. very fast b. relatively slow c. very slow

3.A hormone called .... stimulates the release of stored sugar from the liver.

a. estrogen b. glucagon c. insulin

4.On heating red mercuric oxide, it decomposes into ....

a. oxygen. b. mercury. c. oxygen and mercury. d. no correct answer.

5.At the beginning of the reaction the percentage of the reactants concentration equal

a. 100% b.0% c. 50% d. no correct answer

6.The mathematical relation of the Ohm's law is ....

a . $R=\frac{V}{I}$ b. $I=\frac{R}{V}$ c. R=I xV d. no correct answer

7.Four similar electric cells, are connected in series each one has e.m.f. of 1.5 volt, so the total e.m.f. equal ....volt.

a. 3 b. 6 c. 1.5 d. 12

8.Measuring unit of the quantity of electricity is ....

a. ampere. b. coulomb. c. volt. d. joul.

9................ hormone, liberates the energy necessary for the body from food.

a. Growth b. Estrogen c. Thyroxin d. Progesterone

10.At the end of the chemical reaction, the concentration of the reactants is ....

a. zero % b. 25% c. 50% d. 100%

11.Substance which change rate of the reaction without being changed is ....

a. oxidizing agent. b. active agent. c. catalyst. d. reducing agent.

12.When added copper filings to diluted hydrochloric acid, ...

a. copper oxide is formed. b. copper chloride is formed.
c. hydrogen gas is formed. d. no chemical reaction occurs.

13.The hormone that controls the calcium levels in the blood is .... hormone.

a. calcitonin b. adrenalin c. estrogen d. insulin

14.From the properties of direct current is ....

a. change intensity. b. change direction.
c. constant intensity and direction. d. change intensity and direction.

15.The hormone that promotes the growth of endometrium is the ....hormone.

a. testosterone b. progesterone c. estrogen d. growth

16.All the following elements replace hydrogen of the diluted acid except ....

a. Al b. Zn c. Au d. Sn

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17.Calcitonin hormone controls .... level in the blood.

a. potassium b. oxygen c. calcium d. iron

18.When magnesium replaces copper in a solution of one of its salts, a .... precipitate is formed.

a. black b. green c. red d. blue

19.The two factors of a hereditary trait are similar in the .... individual.

a. pure b. hybrid c. recessive d. (a) and (c) together

20.Oxidization is a chemical process which increases .... percentage in substance.

a. hydrogen b. oxygen c. helium d. fluorine

21.The use of the sliding rheostats is .... of the electrical circuits.

a. change resistance

b. measurement of current intensity

c. measurement of the electric potential difference

d. measurement of electromotive force

22.The increase in the concentration of the reactants during the chemical reaction, the .... in the number of collisions between molecules.

a. decreases b. increases c. equal

23.A reaction between an acid and an alkali to from salt and water is .... reaction.

a. reduction b. neutralization c. simple substitution

24.The scientists .... discovered the means of how the gene controls the appearance of a hereditary trait.

a. Watson and Crick b. Badel and Tatum c. Aly Mostafa and Becquerel

25.On connecting 5 electric cells have the same electromotive force on parallel, the e.m.f of each cell is 2.5 volts, so the total e.m.f equals ....volts.

a. 2.5 b. 5 c. 7 .5 d. 12.5

26.Mendel covered .... of the pistils of a pea plant, to avoid cross pollination.

a. sepals b. stigmas c. stamens d. petals

27.Ohmmeter is a device used to measure ....

a. potential difference. b. electric intensity.

c. electric resistance. d. quantity of electricity.

28.Sodium replaces the following metals in their salt solutions except for ....

a. copper. b. potassium. c. magnesium. d. zinc.

29.Mendel covered .... of a pea plant to avoid cross pollination.

a. stamens b. stigmas c. sepals d. petals

30.Sweet potato includes oxidase enzyme which helps in decomposition of ....faster.

a. hydrogen chloride b. sodium chloride

c. hydrogen peroxide d. sodium carbonate

31.The measuring unit for absorbed nuclear radiation is the ....

a. Joule. b. Sievert. c. Coulomb. d. Ampere.

32.The .... is one example of electrochemical cells.

a. dynamo b. dry cell c. rheostat d. voltmeter

33.From the dominant traits in human being ....

a. straight hair. b. wide eyes.
c. absence of dimples. d. attached ear lobe.

34.Air bag contains sodium ....

a. sulphate. b. azid. c. oxide. d. carbonate

35.All the following are considered reduction process except ....

a. gaining hydrogen. b. losing oxygen. c. gaining electrons. d. losing electrons.

36.Electric resistance is 20 ohms, if the current intensity passing through it is doubled its value becomes .... ohms.

a. 10 b. 20 c. 30 d.40

37.The genetic structure of gametes of pea plant of wrinkled and yellow seeds ....

a. yyRR. b. YYrr. c. yyrr. d.YYRR.

38.When Copper Sulphate is heated, a deposit ....

a. black. b. green. c. blue. d. reddish.

39.Which of the following the dominant trait of the human ....

a. straight hair. b. narrow eyes. c. no freckles. d. attached ear lobes.

40.All following are from factors that affect of the rate chemical reaction except ....

a. concentration of reactants. b. nature of the reactants.
c. nature of the products. d. temperature of the reaction.

41.If a pollination takes place between 2 hybrid individual the product is 60 individual, so the number of produced hybrid individuals may be .... individual.

a. 15 b. 50 c. 30 d. 10

42.The hormone that is responsible for the appearance of male secondary sex characteristics is the .... hormone.

a. insulin b. progesterone c. testosterone d. adrenaline

43.The ratio between the potential difference across two ends of a conductor and the electric current intensity passing through it is equal to ....

a. electromotive force. b. work done.
c. quantity of electricity. d. electric resistance.

44.If mating occurs between two individuals, both of them are hybrid and 200 members resulted from this mating, then the hybrid members produced may be.......individual.

a. 50 b. 100 c. 150 d. 200

45.If an electric current intensity of 2 ampere flows through a conductor in 2 min then the quantity of electricity flowing through the conductor will be .... coulomb.

a. 4 b. 12 c. 120 d. 240

46.When a sodium atom loses an electron from its outer most energy level so it ....

a. oxidized only. b. reduced only.
c. becomes reducing agent only. d. oxidized and becomes reducing agent.

47.When there is a sudden decrease in the car speed, the sodium azid is decomposed into .... gas.

a. N_2 b. H_2 c. O_2 d. CO_2

48.To transfer electric charge of 10 coulomb between two points the potential difference between them is 20 volts, ... joules are needed.

a.21 b. 2 c. 20 d. 200

49.By moving the slider of the Rheostat to increase the length of its wire during connecting it in an electric circuit ....

a. the current intensity increases and no change in the resistance.
b. the current intensity doesn't change and the resistance increases.
c. the current intensity decreases as the resistance increased.
d. the current intensity increases as the resistance decrease

50.The reaction : $Cl_2 + 2e^- \rightarrow 2Cl^-$, represent ....process.

a. oxidation b. reduction c. decomposition d. substitution

51.The quantity of electricity flow in a conductor on passing electric current of intensity (2 ampere) through a cross-section of a conductor within a time (20 minute) equal .... coulomb.

a. 10 b. 20 c. 40 d. 2400

52.In adding silver nitrate solution to sodium chloride solution, ...precipitation is formed from silver chloride.

a. red b. blue c. black d. white

53.The adrenalin hormones is secreted from ....to stimulate the body's organs to respond to emergencies.

a. the two ovaries b. the two testes c. the adrenal glands d. thyroid gland

54.The pancreas secretes a hormone called ....which reduces the level of sugar in the blood.

a. glucagon b. progesterone c. insulin d. estrogen

55.The most active metal in the chemical activity series is ....

a. copper. b. sodium. c. hydrogen. d. aluminum.

56.The .... is used to control the resistance in the electric circuit.

a. rheostat b. ammeter c. voltmeter d. ohmmeter

57.Thermal decomposition of copper carbonate gives ....

a. copper+ water. b. copper+ carbon dioxide.
c. copper oxide+ carbon dioxide. d. copper oxide+ water vapor.

58.The active metal can replace the hydrogen of water which rises and produces ....

a. metal hydroxide. b. metal oxide.
c. metal carbonate. d. metal sulphate.

59.The measuring unit of the electric current intensity is ....

a. ohm. b. ampere. c. volt. .coulomb.

60.White sodium nitrates decompose by heat into .... and oxygen.

a. sodium nitrite b. nitrogen c. sodium oxide d. ammonia

61.The .... apparatus is used for measuring the electric current intensity.

a. ohmmeter b. voltmeter c. ammeter d. rheostat

62.Clear lime water turbid on passing .... gas through it.

a. nitrogen dioxide b. suphur dioxide
c. carbon dioxide d. (a and b) are correct

63.Alternating current is characterized by ....

a. constant intensity. b. variable direction.
c. variable intensity and direction. d. variable intensity.

64.The neutralization reaction occurs between ....

a. metal and non-metal. b. acid and salt.
c. copper and carbon. d. acid and alkali

65.All the following units measuring the current intensity except ....

a. ampere. b. coulomb / second. c. joule / coulomb. d. volt / ohm.

66.The electrical resistance can measured by us in ....

a. ohmmeter. b. voltmeter. c. ammeter. d. rheostat.

67.One of the properties of the alternating current is ....

a. constant intensity. b. constant direction.
c. variable direction and constant intensity. d. variable intensity and direction.

68.The hormone which stimulates body organs to respond for emergencies is ....

a. insulin. b. glucagon. c. adrenaline. d. estrogen.

69.One of the properties of direct current is ....

a. constant value and direction.
b. constant value but variable direction.
c. variable value but constant direction.

70.When magnesium replaces copper in its salt solution, a .... precipitate is formed.

a. black . b. red c. reddish brown

71.The .... hormone liberates the needed energy from the food stuff.

a. growth. b. estrogen. c. thyroxin.

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72.The .... is the only way for hormones to reach the target cells.

a. saliva b. blood c. water d. ducts

73.Generating an alternating electric current is by using the ....

a. rheostat. b. dynamo. c. dry cell. d. voltmeter.

74.All the following metals replace hydrogen of acid except ....

a. potassium. b. magnesium. c. silver. d. zinc.

75.From compounds which are decomposed by heat into metal and oxygen is ....

a. $Cu(OH)_2$ b. $CaSO_4$ c. $CuCO_3$ d. HgO

76.From the dominant traits in the human being is the .... trait.

a. straight hair b. wide eyes
c. absence of dimples in the face d. presence of freckles in the face

77.According to Mendel's second law, each pair of the alternative traits is inherited independently of the others and appears in the second generation at a ratio of ....

a. 1 : 1 b. 2: 1 c. 3 : 1 d. 4: 1

78.Carbon dioxide evolves during thermal decomposition of .... compound.

a. HgO b. $CuSO_4$ c. $CuCO_3$ d. $Cu (OH)_2$

79.The ratio between the potential difference across two ends of a conductor and the electric current intensity passing through it is equal to ....

a. e.m.f. b. electric current.
c. quantity of electricity. d . electric resistance.

80.Double substitution reactions between salt solutions are accompanied by formation of ....

a. metal. b. a precipitate. c. an oxide. d. a non-metal.

81.The nuclear energy is peacefully used in the industrial field to convert sand to .... for manufacturing computer processors.

a. electric energy b. silicon sheets c. nuclear fuel d. atomic bombs

82.The scientists .... discovered the means of how the gene controls the appearance of the hereditary trait.

a. Mendel and Newton c. Johansen & Mendel
b. Watson and Crick d. Badel and Tatum

83.On adding silver nitrate solution to sodium chloride solution, ... is formed.

a. a white precipitate of sodium nitrate b. a white precipitate of silver chloride
c. a blue precipitate of silver chloride d. no precipitate

84.When hydrochloric acid reacts with sodium carbonate, then the reaction produces gas which ....

a. turbid limewater. c. increases ignition.
b. burns with pop sound. d. its color is red brown.

85.The charge transmitted by a constant current of intensity one ampere in one second is ....

a. coulomb. b. volt. c. joule. d. ohm.

86.The reaction in which double substitution occurs between the ions of two compounds to form two other new compounds is called............... reaction.

a. double substitution
b. simple substitution
c. neutralization
d. oxidation and reduction

87.Mendel chose the garden pea plant to conduct his researches for these reasons except one of them, ...

a. it is easy to be planted the pea plant.
b. it can self-pollinate.
c. it can easily be artificially pollinated.
d. its life cycle is long.

88.Man suffers from .... disease when his food lacks of iodine.

a. dwarfism b. diabetes c. gigantism d. simple goiter

89.The rate of breaking up of hydrogen peroxide increases by the addition of ....

a. manganese oxide. b. magnesium oxide. c. manganese dioxide.

90.The speed of most chemical reactions is .... by rising temperature.

a. increased b. decreased c. not affected

91.When passing hydrogen gas on hot black copper oxide, ... process occurs for copper oxide.

a. oxidation
b. reduction
c. thermal decomposition
d. (a) and (b) together

✹(3) Complete the following :

1. $Zn+2HCl \rightarrow$ .... + ...
2. The ability to roll the tongue is one of the .... traits, while the attached ear lobe is one the .... traits in the human.
3. The pea plant is characterized by it can be easily .... and its short life cycle.
4. The hormone controls speed of growth rate of body muscles and bones is .... hormone.
5. The .... effects of radiation is a result of changing in the sex chromosomes composition of the cell.
6. In human, the traits of the blue narrow eyes are considered as .... hereditary traits.
7. The....................... apparatus is used to measure the electromotive force of a battery in unit known as ....
8. The .... is considered a part of DNA which consists of smaller structural units called ....
9. The .... current can be transferred for short distances only, while the .... current can be transferred for short and long distances.
10. During .... reaction, the compound is decomposed by heat into its simple components, and in the .... reaction a metal substitutes another one in its salt solution.
11. The .... electric current is used in electroplating, while the .... electric current is used in lighting streets and operating electric appliances.
12. During Mendel's experiments, he removed the stamens from the flowers before they become mature to prevent .... pollination, and he covered stigmas flowers to prevent .... pollination.
13. The .... is used to measure the potential difference.
14. Na_2CO_3 +....................... $\rightarrow 2NaCl + H_2O + CO_2$
15. Thyroid gland secretes two hormones .... and ....
16. The curly hair trait dominates the straight hair trait that follow .... principal in the human being.
17. .... is the project concerned with effect of different mutations on work of genes.
18. The reactions of covalent compounds are slower because they take place between ....
19. Genes are DNA parts present on ....

20. If the secretion of the growth hormone decreases at the childhood, the human suffers from ....

21. Every hereditary trait is controlled by two hereditary factors, the two hereditary factors in every trait separate when the .... are formed.

22. The .... hormone liberates the needed energy from.the food stuff.

23. The measuring unit for absorbed nuclear radiation is ....

24. Sweet potato contains .... enzyme which helps in decomposition of hydrogen peroxide.

25. The measuring unit of work is .... , whereas the measuring unit of amount of electricity is ....

26. Reaction between an acid and an alkali forms .... and ....

27. During the chemical reaction, the concentration of reactants gradually .... , whereas the concentration of products gradually ....

28. An instrument called .... is used to measure the electric current intensity, whereas the electric resistance is measured by an instrument called ....

29. The speed of chemical reaction can be measured by the rate of appearance of one of .... substances.

30. To respond to emergencies adrenal gland secretes .... hormone.

31. When four cells are connected in a parallel way and the e.m.f for each one 1.5 volt. The e.m.f for the battery = ... volt.

32. When the amount of iodine in food decreases , the secretion of .... hormone decreases from .... gland.

33. Natural .... elements like rubidium, the atom's nuclei of these element contain a number of .... more than the number required for its stability.

34. The electric current produced from electrochemical cells is .... current.

35. The breaking up of bonds in the molecules of reactants and the formation of new bonds in the molecules of product is called ....

36. The compound decomposes by heat into its simple components in .... reactions.

37. They are parts of DNA present on the chromosomes and control the hereditary traits of the individual is known as ....

38. The voltmeter is connected to the electric circuits in .... and ammeter is connected in ....

39. Hormone .... controls the calcium levels in the blood, while hormone .... promotes the growth of endometrium.

40. In the reaction of sodium with chlorine to form sodium chloride, ... is considered as an oxidizing agent, and .... is considered as a reducing agent.

41. Some traits are transmitted from one generation to another they are called ...., and some traits are not transmitted from one generation to another they are called ....

42. The .... is used to measure the electromotive force of a battery.

43. The chromosome is chemically consists of a nucleic acid called .... combined with ....

44.. .... gas evolves when sodium reacts with water, while .... gas evolves on heating blue copper sulphate.

45. The sources of nuclear radiation pollution are divided into .... and ....

46. Electric current intensity is .... proportional to potential difference between two terminals of a conductor at a constant temperature.

47. The electric resistance measured with .... device, and its unit of measure is ....

48. Each hereditary traits controlled with .... , separated when .... are formed.

49. Nitrogen pentaoxide breaks up into .... gas and .... gas.

50. The electric current is generated from a dynamo due to converting .... energy to .... energy.

51. The reaction of covalent compounds are .... than of the ionic compounds.

52. Increase of secretion in the growth hormone at the childhood cause .... disease.

53. The traits that are transmitted from one generation to another is the ....

54. Chemical reaction is .... in the reactant molecules, and .... in the products molecules.

55. Most metals .... decompose to .... and sulpher trioxide.

56. The .... is used to measure the electromotive force of the battery in measuring unit is called ....

57. When magnesium replaces copper in its salt solution a precipitate its color is .... is formed.

58. When glucose level is increased in blood, the pancreas secretes .... hormone.

59. When the amount of glucose decreases in the blood, pancreas secretes .... hormone.

60. Transmission of electric charges depends on the .... between two conductors.

61. .... hormone is responsible for female secondary sex character.

62. The traits that are not transmitted from one generation to another are called .... traits.

63. .... is from the examples of electrochemical cells.

64. The chemical energy is converted into electric energy by .... cells.

65. Neutralization it is the reaction between an acid and an alkali forming .... and ....

66. During the chemical reaction, the concentration of .... decreases, while the concentration of .... increases by the time.

67. The resistance of a conductor that (1) ampere is passed through it when the potential difference between its terminal is (1) volt = ...

68. Carbon dioxide gas detected by changes .... into turbid.

69. In the beginning of the reaction, the concentration of the reactants is .... %

70. The scientist .... is the founder of heredity.

71. The instrument which is used to measure the electric potential difference is ....

72. Sodium metal reacts with water producing sodium hydroxide and .... gas evolves.

73. Every hereditary trait is controlled by two hereditary factors which separate during formation of the ....

74. The curly hair trait dominates over the straight hair trait is follows the principle of .... in human being.

75. Some reactions are very slow and need several months to take place, such as the formation of ....

76. The...................... project is interested in the effect of the various mutations on the function of the genes.

✹(4) Correct the underlined words:

1	Most metal carbonates decompose by heat to metal oxide and **nitrogen** gas evolves.	………………………
2	The reactions of ionic compounds are **slower** than those of the covalent compounds	………………………
3	**Estrogen** promotes the growth of endometrium	………………………
4	**Ohm** is the measuring unit for absorbed nuclear radiation.	………………………
5	Alternating current is characterized by **constant** intensity and direction	………………………
6	**Oxidation** is a chemical process in which an atom gains one electron or more.	………………………
7	In **positive catalysts** reaction, catalyst is used to slow down the chemical reaction.	………………………
8	The **attached** ear lobe from dominant hereditary trait.	………………………
9	In the dry cell the **magnetic** energy change to electric energy	………………………
10	Mendel removed the **petals** of pea flowers to prevent self-pollination.	………………………
11	The **acquired** traits are transmitted from one generation to another	………………………
12	Genes are parts of DNA found in the **cytoplasm** of the cell.	………………………
13	The **Ammeter** is connected in parallel in the electric circuit.	………………………
14	On fearing and anger, the secretion of **thyroxin** hormone increases.	………………………
15	Some chemical reaction are very slow, because it may takes million of years to occur such as the formation of the **iron rust**	………………………
16	Mendel chose **ten** hereditary traits in the pea plant to perform his experiments	………………………
17	By using 3gm of catalyst in an experiment. Its mass after finishing the reaction is **less than** 3 gm	………………………
18	Rate of reaction of the dilute hydrochloric acid with iron filling is **slower** than that with the same mass of a piece of iron	………………………
19	Dwarfism disease results from decrease of secretion in the **insulin** hormone at the childhood	………………………
20	The measuring unit of the electromotive forces for the electric cell is **ampere**	………………………
21	**The iron rust** is a fast chemical reaction	………………………

22	The **chemical** energy can be converted to electrical energy by using the electric generator (dynamo).	………………………
23	Nitrogen pentoxide breaks up into nitrogen dioxide gas and **nitrogen** gas	………………………
24	Hormones are secreted in the body by some organs called **ductile glands**	………………………
25	The **estrogen** hormone liberates the needed energy from the food stuff	………………………
26	The reactions of the covalent compounds are **fast**	………………………
27	Most metal carbonates decompose by heating into **metal** and carbon dioxide.	………………………
28	The reactions which take place inside the Earth to form **iron rust** may take millions of years.	………………………
29	**Current intensity** is the state of an electric conductor that shows the transfer of electricity from or to it, when it is connected to another conductor.	………………………
30	When the blood sugar level decreases, the pancreas secrete the hormone **insulin**.	………………………
31	On adding piece of magnesium to copper sulphate solution **black** precipitates is formed.	………………………
32	Nitrogen pentoxide breaks up into nitrogen dioxide gas and **nitrogen** gas.	………………………
33	On decreasing of sugar level in the blood, the **liver** responds by secreting glucagon hormone.	………………………
34	The ionic compounds are fast in their reactions, because they decompose into **molecules** that easily share in the reaction.	………………………
35	When we add silver nitrate solution to sodium chloride solution, a **black** precipitate is formed	………………………
36	The electromotive force of three similar cells connected in parallel is **twice** the electromotive force of one cell.	………………………
37	Mercuric oxide is **silvery** colour	………………………
38	The radioactivity phenomenon was discovered by the scientist **George Simon**	………………………
39	Rate of chemical reaction depends on the concentration of the **products**	………………………
40	The electric current that produced from the **dynamo** flows in one direction.	………………………
41	Each **chromosome** produce a special enzyme which is responsible for producing a type of protein.	………………………
42	The nuclei of radioactive elements contain number of **protons** more than the number required for its stability	………………………
43	The **estrogen** hormone is secreted on increasing percentage of glucose sugar in the blood.	………………………

44	Voltmeter is connected in the electric circuit in **series**	………………………
45	**Ohmmeter** is used to measure the current intensity.	………………………
46	The **glucagon** hormone controls the calcium levels in the blood.	………………………
47	The nucleus of each cell carry a complete group of **hormones** which is responsible for appear the hereditary traits in living organisms.	………………………
48	Rate (speed) of chemical reaction is increased by **decreasing** the temperature.	………………………
49	When we add silver nitrate solution to sodium chloride solution a white precipitate is formed of **sodium nitrate.**	………………………
50	The **catalyst** is the substance which loses one or more electrons during the chemical reaction.	………………………
51	**Watson and Creek** scientists discovered the means of how gene controls the appearance of a trait.	………………………
52	When pancreas stops secreting insulin hormone, the level of glucose sugar **decreases** in the blood.	………………………
53	The increase of growth hormone secretion in the childhood causes **dwarfism**.	………………………
54	Chromosome is chemically consists of nucleic acid DNA is bind with **fats**.	………………………
55	**Oxygen** gas detected by changes limewater into turbid.	………………………
56	**Iron** element participates in the composition of thyroxin hormone.	………………………
57	From uses of nuclear energy in **medical** field eliminate pests and improve some plants races.	………………………
58	**Ammeter** apparatus is used to measure electric potential difference.	………………………
59	The two scientists **Padel & Tatum** made a model for DNA molecule.	………………………
60	In the circuit of the direct current, **molecules** flow from one of the two poles to the other in the electrochemical cell.	………………………
61	The unit of measuring the electric charges is **volt**.	………………………

(5) Give reason for:

1. Some people suffer from simple goiter.

   ....

2. Copper doesn't react with dilute hydrochloric acid whereas zinc reacts with it.

   ....

3. The rate of chemical reaction increases by increasing concentration of reactants.

   ....

4. A red precipitate is formed when magnesium is added to copper sulphate solution.

   ....

5. Mendel covered the stigmas of the pistils of pea flowers during studying the hereditary traits.

   ....

6. Mendel choose the garden pea plant to conduct his experiments.

   ....

7. Learning to walk in children is not considered a genetic trait.

   ....

8. Adding a piece of sweet potato enhances the decomposition of the hydrogen peroxide.

   ....

9. A white precipitate is formed on adding silver nitrate solution to sodium chloride solution.

   ....

10. Blood stream is the only way for hormones to reach their sites of action.

    ....

11. Charging the mobile phone requires electric transformer.

    ....

12. Reaction between covalent compound are slow, whereas reaction between Ionic compounds are fast.

    ....

13. Diluted Hydrochloric acid does not react with the copper.

    ....

14. The fridge is used to preserve food.

    ....

15. Reactions between ionic compounds are fast whereas reactions between covalent compounds are slow.

    ....

16. Pancreas is a dual functional gland (has two functions).

    ....

17. Sodium is from the reducing agents while chlorine is from the oxidizing agents.

    ....

18. The ability to roll the tongue is one of the dominant traits in the human being.

....

19. Nuclear radiation has genetic effects.

....

20. The free ear lobe trait dominates the attached ear lobe trait.

....

21. Rheostat is used in some electric circuits

....

22. The pituitary gland is called the master gland.

....

23. Uranium element is consider from radioactive elements.

....

24. Blood is the only way for the hormone to reach its site of action (target cells).

....

25. A continuous growth in the limbs' bones of some persons so the person becomes a giant.

....

26. The combustion of steel scours used for cleaning aluminum in jar contains oxygen is faster than its combustion in the air.

....

27. Mendel removed the stamens from the flowers of pea plant during his experiments.

....

28. It is preferred to use alternating current more than direct current.

....

29. Food preservation in the freezer of the refrigerator.

....

30. Some electric circuits contain variable resistance.

....

31. The rate of the reaction of hydrochloric acid with the iron filings is faster than that with a piece of iron of the same mass.

....

....

....

32. A gas evolves on putting a piece of aluminum in diluted hydrochloric acid .

....

33. Speed of chemical reaction increases with rise in temperature.

....

34. When a yellow pod pea plant is pollinated with a pure green pod pea plant, they produce plants that are all with green pods.

....

35. Some people who depend mainly on eating rice have deficiency in vitamin (A).

....

36. Although aluminum comes before zinc in chemical activity series, but it takes a longer time to react with hydrochloric acid practically.

....

37. Some electric cells are connected in the electric circuit in series.

....

38. The voltmeter is connected between the two poles of battery.

....

✸(6) What happen if:

1. Decrease the amount of growth hormone in the childhood.

   ....

2. Heating red mercuric oxide HgO.

   ....

3. The human body expose to a large dosage of nuclear radiation for a short time

   ....

4. Putting a piece of magnesium in copper sulphate solution.

   ....

5. Ammeter and voltmeter readings used in verifying Ohm's law if the resistance is burnt.

   ....

6. Add a small piece of sodium metal to water.

   ....

7. Increase in the concentration of the reactants. (According to the speed of the chemical reaction).

   ....

8. When the radiation affects on the human body cellular effects.

   ....

9. When the individual carries a recessive gene from both parents

   ....

10. The body cells can't use glucose sugar from the blood.

    ....

11. Adding manganese dioxide to a test tube containing hydrogen peroxide.

    ....

12. Replacing a piece of iron with iron filings has the same mass on reacting with diluted acids.

    ....

13. Heating green copper carbonate.

    ....

14. Adding silver nitrate solution to sodium chloride solution.

    ....

15. Pancreas stopped secreting glucagon hormone.

    ....

16. Two charged conductors connected with each other one of them has higher electric potential from the other.

    ....

17. Mating between two pure individuals differ in two pairs or more of contrasting traits.

    ....

18. Cross-pollination between two pure pea plants, one with yellow pod and the other with green pod.

....

19. When the gene fails to produce its own enzyme.

....

20. To the number of collisions when adding a negative catalyst to a chemical reaction.

....

21. To the colour of red mercuric oxide when it is heated.

....

22. Adding hydrochloric acid to sodium carbonate salt. (Without writing equation).

....

23. Touching two conductors (A) and (B) where the electric potential of conductor (A) is higher than the electric potential of conductor (B).

....

24. Changing the chemical composition of hemoglobin.

....

25. Mating between two pure individuals which are different in a pair of contrasting traits.

....

26. When iodine salts decrease in water and food of man.

....

27. The atom's nucleus of an element contains a number of neutrons more than the number required for its stability.

....

28. Increasing surface area according to the reactants.

....

29. Exposure of red blood cells which contain hemoglobin to the nuclear radiation.

....

30. Decreasing the activity of pituitary gland in the body

....

31. Human body is exposed to a large dosage of radiation for a short time.

....

32. Putting two effervescent tablets in two similar beakers, one of them contains cold water and the other contains hot water.

....

33. Touching two charged conductors by a conducting bar, the first conductor has an electric potential is equal to the electric potential of the second one.

....

34. The length of the sliding rheostat wire increase in circuit "to the electric current intensity".

....

35. Heating blue copper hydroxide.

....

36. Pancreas does not secrete glucagon hormone.

....

37. Adding a negative catalyst to rapid reaction.

....

38. Heating of sodium nitrate.

....

39. If the length of the rheostat wire increases (Related to the electric current intensity).

....

40. A substance gains an electron or more during a chemical reaction.

....

41. The stigma of the flower of pea plant uncovered during the study of the inherited traits .

....

42. Two conductors having the same electric potential are connected together by a wire.

....

43. The atom nucleus of an element contains a number of neutrons more than the number required for its stability.

....

44. You keep food outside the refrigerator for a long time.

....

45. Two charged conductors touch and the electric potential of one conductor is 10 volt but the electric potential of the other conductor is 30 volt.

....

46. Two pure individuals bearing two pairs of contrasting traits are crossed.

....

47. When the dominant gene exists with another for the same characteristic.

....

48. the number of collisions when the temperature of the reaction is raised up.

....

49. When manganese dioxide (MnO_2) is added in a test tube that contains hydrogen peroxide.

....

50. If there is a mating between two individuals resulting in producing 50% dominant individuals and 50% recessive individuals.

....

✹(10) Define :

1. The principle of complete dominance.
2. Mendel's first law.
3. Thyroxin hormone.
4. Adrenalin hormone.
5. Ohm's law.
6. Neutralization reaction.
7. Chemical reaction.
8. The series of chemical activity
9. Radioactivity
10. Genes.
11. Hormones.
12. The ampere.
13. Catalyst.
14. Mendel's second law.
15. The electric potential of conductor.
16. The human genome.

✹(8) Problems

1

If the work done to transfer an electric charge of 300 coulomb between two points is 66000 joules, Calculate the potential difference between the two points.

....

....

....

2

Battery consists of three similar cells, the electromotive force of each cell is 1.5 volt. Calculate the total electromotive force of the cells, when they are connected in :

1. series. **2. parallel.** (write the used law in each case)

....

....

....

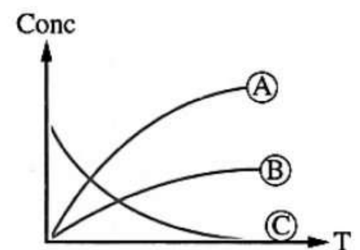
3



$$2NaNO_3 \xrightarrow{\Delta} 2NaNO_2 + O_2$$

From the chemical equation and the opposite graph mention which curve represents the concentration of each :

1. Sodium nitrate.
2. Oxygen gas.
3. Sodium nitrite.



....

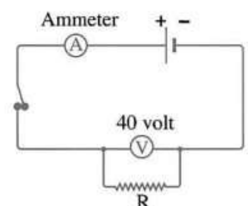
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4

In the opposite figure :

Calculate the current intensity passing, If the work done to transfer the electric change is 240 joule and the time of flowing is 2 second.



....

....

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5

You have 4 similar electric cells, the electromotive force of each one is 1.5 volt, illustrate by drawing only how you connect them to get batteries of e.m.f of 3 volt in two ways.

....

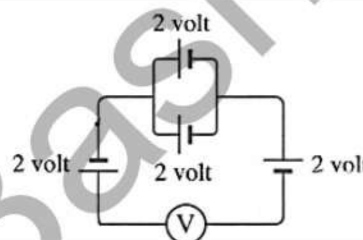
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6

From the opposite diagram :



1. The voltmeter reading = ... volt.
2. If connect all electric cells in series, the reading of voltmeter is .... volt.

7

In the following reaction : $2Na + Cl_2 \longrightarrow 2NaCl$

Write the meant by each of the following :

1. Oxidation process.
2. Reduction process.
3. Oxidizing agent.
4. Reducting agent.

....

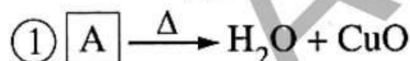
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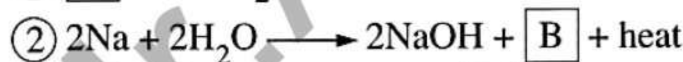
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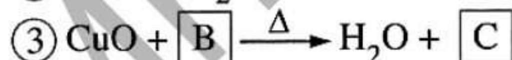
From the opposite reaction :



① $\boxed{A} \xrightarrow{\Delta} H_2O + CuO$



② $2Na + 2H_2O \longrightarrow 2NaOH + \boxed{B} + \text{heat}$



③ $CuO + \boxed{B} \xrightarrow{\Delta} H_2O + \boxed{C}$

1. Write chemical formula for $\boxed{A}$ $\boxed{B}$ $\boxed{C}$
2. What is the type of reaction in ①, ②, ③
3. What is the name of chemical process which appears to black copper oxide in reaction ③ ?

....

....

....

....

9

If crossing takes place between two pea plants, one is pure white flowers, and the other is pure red flower, explain on genetic bases the result of the crossing of the first generation only, not that the red gene color is symbolized by (R) and the white gene color is symbolized by (r).

....

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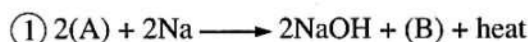
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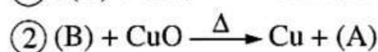
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10

From the following two equations answer the following :



(1) $2(A) + 2Na \longrightarrow 2NaOH + (B) + heat$



(2) $(B) + CuO \xrightarrow{\Delta} Cu + (A)$

1. Write the chemical formula for the (A) & (B) substances.
2. How to detect the substance (B) ?
3. What is the type of reaction No. (1), and what is the type of reaction No. (2) ?

....

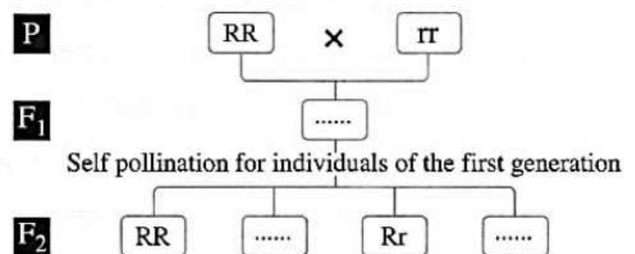
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11

The opposite figure illustrates a cross-pollination :
between a pea plant with red flowers
and another pea plant with white flowers :



1. Determine by symbols the individuals of the first generation.
2. Fill in gabs the second generation.
3. Is the results verify Mendel's first law ? State your reason.

....

....

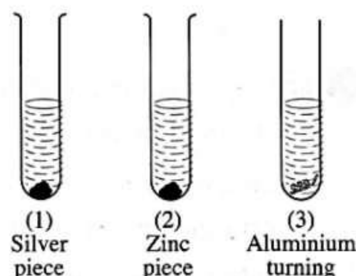
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12

On adding suitable equal amounts of diluted hydrochloric acid to each of the represented tubes (1, 2, 3) in the figure, explain the following :



1. Non occurrence of reaction in tube (1).
2. Delaying the beginning of the reaction in tube (3) than tube (2) although aluminium is more active then zinc.
3. What happen to the rate of the reaction when zinc piece in tube (2) converted into small pieces or zinc powder, and why?
4. What is the name of gas evolves during reaction ?

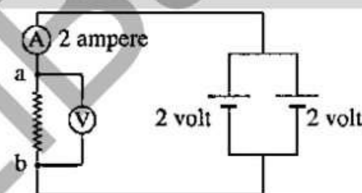
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13

From the opposite circuit, find the work done required to transfer a quantity of electric charge between points (a) and (b) through 5 minutes if the electromotive force of each cell is two volt and the reading of ammeter is two ampere.



....

....

....

14

The hybridization in the Drosophila between a male and a female, both of them are long wings and the product is 27 members with long wings and 9 members with short wings. Explain that on genetic bases (If the long wing is T and short wing is t .

....

....

....

....

15

Resistive electrical conductor of 1100 ohms connected to a voltage source of 110 volt, Calculate the amount of electricity passing by 10 minutes.

....

....

....

....

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16

You have three identical electric cells and the e.m.f. of each is 1.5 volts , illustrate by drawing only how you can connect them to get a battery of e.m.f. equals:

1. (4.5) volts 2. (3) volts

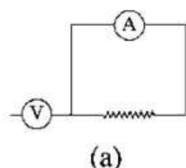
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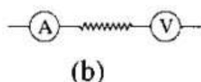
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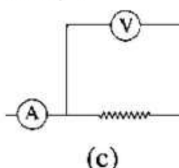
Which one of the following figures represents a part of an electric circuit that contains an ammeter and a voltmeter connected in right way ?



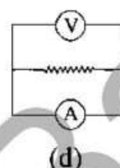
(a)



(b)



(c)



(d)

....

18

Choose from column (B) and (C) what suit with column (A) then write the complete statement.

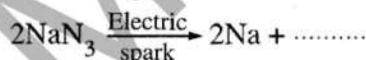
(A) Reaction occurs	(B) Gas produced	(C) How can you detect the produced gas ?
1. Sodium carbonate with diluted hydrochloric acid.	(1) H_2	a. Increases the glowing of the match stick.
2. Sodium with water.	(2) O_2	b. Turbid clear limewater.
3. Heating sodium nitrate.	(3) SO_3	c. Burning with a pop sound.
	(4) CO_2	d. Form white fumes with ammonia.

....

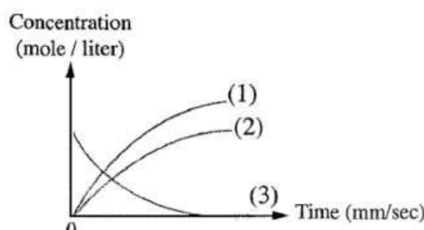
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19

The opposite graph represents the rate of rapid decomposition of the substance of sodium azid. (which is present inside the air bag)



$2NaN_3 \xrightarrow[\text{spark}]{\text{Electric}} 2Na + \dots\dots$



1. Complete the equation.
2. From the graph, write the name of compound indicated by each number.
3. Mention the importance of air bag.

....

....

....

20

If the potential difference between the terminals of a conductor is (6) volts, and the electric current of intensity (0.5) ampere is passed through it, Calculate the intensity of the electric current passing through this conductor if it is connected with a voltage source of (12) volt

....

....

....

....

21

Use the following symbols (TtAa) and (ttaa) to express the results from the pollination between hybrid long-stemmed, red flower pea plant with another pure short-stemmed, white flower pea plant showing (parents, gametes and first generation).

....

....

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....

....

22

Calculate the work done to transfer an electric charge of (20 coulomb) through cross section of a conductor, if the potential difference between its terminals is (50 Volt).

....

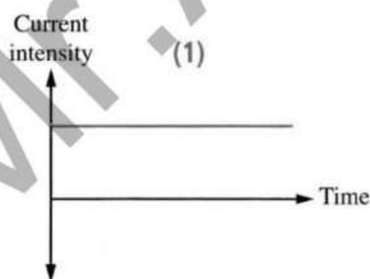
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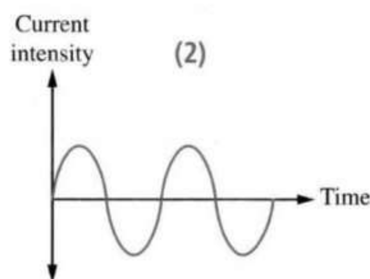
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23

Study the following two figure (1) and (2), then complete the spaces by suitable words :

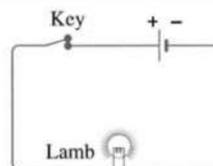




1. Figure (1) represents .... electric current that produced from .... which changes .... energy into electric energy.
2. Figure (2) represents .... electric current the produced by .... which changes .... energy into electric energy.

24

The given figure represent electric lamb its filament can't carry current more than (1.5 ampere).
When the circuit closed a charge of (42) coulomb pass through its filament in half minute.



Explain by calculation if its filament burn or not ? and Why ?

....

....

....

25

From the following table choose a statement from column (B) and another one from column (C) to be suitable for the items in column (A) and write a complete statement.

(A)	(B)	(C) Type of reaction
1. $NaNO_3$ 2. Al	a. decomposed by heat b. replace the hydrogen in water c. is formed in the form of white precipitate d. replace the hydrogen of the acid after a while.	e. Salt is formed and hydrogen gas evolves. f. When it reacts with silver chloride. g. Produce yellowish white substance and oxygen. h. Oxide is formed and oxygen evolves.

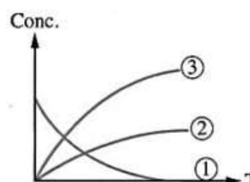
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26

The opposite graph represents the breaking up of N_2O_5 with time :

1. Write the balanced symbolic equation of this reaction.
2. Replace the numbers on the figure by suitable substances from the equation.



....

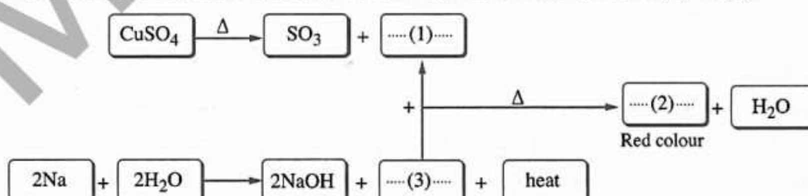
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27

Study the chemical reactions in the following diagram, then answer :

Write the chemical formula for the chemical materials labeled from (1) to (3).



....

....

....

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28

From the reaction : $2NaOH + CuSO_4 \longrightarrow$ salt + precipitate

Answer the following :

1. Mention the name of the salt.
2. How can you measure the speed of reaction practically ?
3. What happens to the precipitate if heated strongly ?
   (Write the equation of the reaction).

....

....

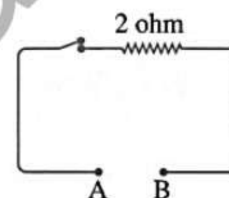
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29

If you have four similar electric cells :

The e.m.f of each cell is 2 volt.

Show by drawing the method of their connection between the two points (A) and (B) in the opposite figure to obtain current of intensity 3 ampere.



....

....

....

....

30

Calculate : Current intensity due to the flow 6000 coulombs through across of a conductor in 5 minutes.

....

....

....

....

31

Amr placed a piece of zinc in a dilute hydrochloric acid solution, with the formation of gas bubbles around the piece of zinc :

1. What is the name of the evolving gas?
2. What is the type of reaction?
3. What happens in the case of replacing the piece of zinc with a piece of copper ?

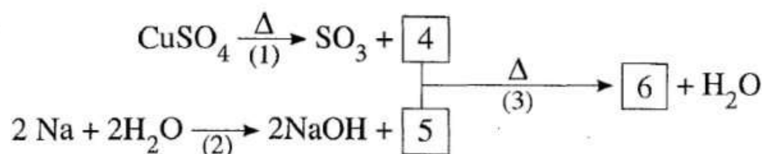
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32

Study the chemical reactions, in the following diagram then answer the following question :



First : Mention the type of chemical reactions : 1 , 2 , 3

Second : Write the chemical formula for : 4 , 5 , 6

....

....

....

33

A pea plant with hybrid yellow seeds has been crossed over with a plant of green seeds. Explain on genetic bases the genotype of the parents, the gametes and the first generation individuals.

....

....

....

....

34

Use symbols R,r to express the results produced from crossing between:
A pea plant with white flowers and another one with pure red flowers.

....

....

....

35

From the following reaction and equation :



$Mg + 2HCl \longrightarrow MgCl_2 + H_2\uparrow$

Explain :

1. The oxidation and reduction processes.
2. Determine the oxidizing agent and the reducing agent in the reaction.

....

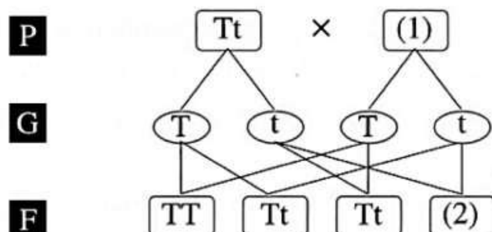
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36

The following figure represents a self pollination in pea plant with hybrid tall stem – replaces the digits (1) and (2) by suitable letters.

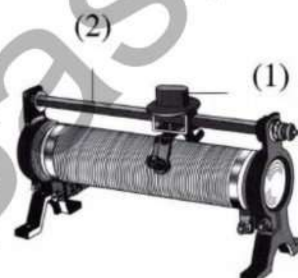


37

From the opposite figure :

1. What is the name of this device ? And what is used ?

2. Write down the numbers (1) and (2).



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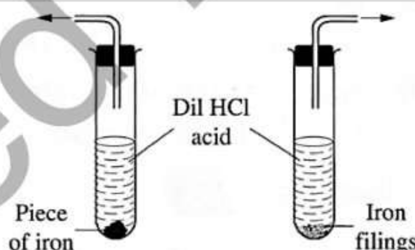
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38

From the two opposite figures :

1. Express this reaction with a balanced symbolic chemical equation.
2. What is the factor that affects the speed of this reaction ?
3. What happens on replacing iron by copper ?



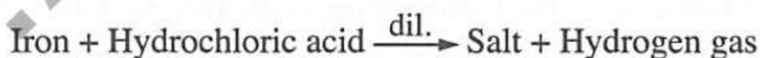
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39

In the reaction :



$$\text{Iron + Hydrochloric acid} \xrightarrow{\text{dil.}} \text{Salt + Hydrogen gas}$$

1. Write the chemical formula of the produced salt.
2. What happens when replacing a piece of iron with iron filings has the same mass related to the rate (speed) of the previous chemical reaction ?

....

....

....

....

Mob : 01153233911
Whatsapp : 01003494547

40

From the following reaction :



$$2\,Na + Cl_2 \longrightarrow 2\,NaCl$$

Explain oxidation and reduction processes

{if you know that the atomic number of Na is (11) and Cl is (17)}

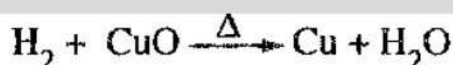
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41



$$H_2 + CuO \xrightarrow{\Delta} Cu + H_2O$$

in this reaction determine the oxidizing agent and reducing agent.

....

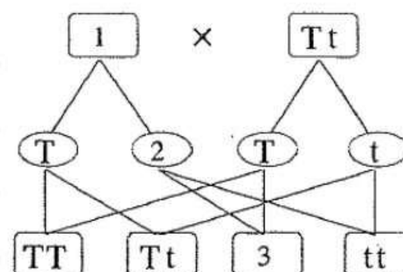
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42

The following figure represents the process of pollination in a pea plant of hybrid tall stem.

1. Write what is indicated by the numbers (1) , (2) and (3) by suitable symbols in your answer paper.
2. Define the law of segregation.



....

....

....

....

43

The potential difference between two ends of a conductor is (6 volt) and the electric current intensity passing in the conductor is (0.5 ampere). What is the electric current intensity passing in the conductor if it is connected by electric source. its electric potential is (12 volt) ?

....

....

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....

Model Answer

✹ (1) Write the scientific term:

1. Direct current
2. Endocrine glands
3. Dominant traits
4. Electric current
5. Reduction process
6. Rheostat
7. Electric resistance
8. Speed of chemical reaction
9. Hormone
10. Electric intensity
11. Oxidase enzyme
12. Catalytic converter
13. Coulomb
14. Catalyst
15. Enzyme
16. Sievert
17. Chemical reaction
18. the potential difference across two terminals of a conductor .
19. Acquired traits.
20. Neutralization reaction
21. Ohm
22. Target cell
23. Dwarfism
24. Recessive traits
25. Pure individual
26. Genetics
27. Testosterone
28. Electric potential of conductor
29. Chemical activity series
30. Electromotive force
31. Growth hormone
32. Hybrid individual
33. Endocrine gland
34. Electric current
35. Simple substitution reaction
36. The principle of complete dominance
37. Hormone
38. Exophthalmic goiter
39. Genes
40. Oxidation
41. Gametes
42. Positive catalytic reaction
43. Double substitution reaction
44. Reducing agent
45. Thermal decomposition reaction
46. Radioactivity phenomenon
47. Alternating electric current
48. Hormone disorder
49. Salt and water
50. Estrogen hormone
51. Oxidation process
52. Dominant traits
53. Voltmeter

✹(2) Choose the right answer:

1. A
2. B
3. B
4. C
5. A
6. A
7. B
8. B
9. C
10. A
11. C
12. D
13. A
14. C
15. B
16. C
17. C
18. C
19. D
20. B
21. A
22. B
23. B
24. B
25. A
26. B
27. C
28. B
29. B
30. C
31. B
32. B
33. B
34. B
35. D
36. B
37. B
38. A
39. C
40. C
41. C
42. C
43. D
44. B
45. D
46. D
47. A
48. D
49. C
50. B
51. D
52. D
53. C
54. C
55. B
56. A
57. C
58. A
59. B
60. A
61. C
62. C
63. C
64. D
65. C
66. A
67. D
68. C
69. A
70. B
71. C
72. B
73. B
74. C
75. D
76. B
77. C
78. C
79. D
80. B
81. B
82. D
83. B
84. A
85. A
86. A
87. D
88. D
89. C
90. A
91. B

✹(3) Complete the following :

1. $ZnCl_2 + H_2$
2. Dominant – recessive
3. Planted
4. Growth
5. Genetic
6. Recessive
7. Voltmeter – volt
8. Genes – nucleotides
9. Direct – alternating
10. Thermal decomposition – simple substitution
11. Direct – alternating
12. Self – cross
13. Voltmeter
14. HCl
15. Throxin – calcitonin
16. Complete dominance
17. Human genome
18. Molecules
19. Chromosome
20. Dwarfism
21. Gametes
22. Thyroxin
23. Sievert
24. Oxidase
25. Joule – coulomb
26. Salt – water
27. Decrease – increase
28. Ammeter – ohmmeter
29. Product
30. Adrenaline
31. 1.5
32. Thyroxin – thyroid
33. Radioactive – neutrons
34. Direct
35. Chemical reaction
36. Thermal decomposition
37. Genes
38. Parallel – series
39. Calcitonin – progesterone
40. Chlorine – sodium
41. Hereditary – acquired
42. Voltmeter
43. DNA – Protein
44. Hydrogen – SO3
45. Natural – artificial
46. Directly
47. Ohmmeter – ohm
48. Two hereditary factors – gametes
49. NO2 – O2
50. Mechanical – Electric
51. Slower
52. Gigantism
53. Hereditary
54. Breaking – formation
55. Sulphate – metal oxide
56. Voltmeter – volt
57. Red
58. Insulin
59. Glucagon
60. Potential difference
61. Estrogen
62. Acquired
63. Dry cell
64. Dry
65. Salt – water
66. Reactant – product
67. 1 Ohm
68. Clear lime water
69. 100 %
70. Mendel
71. Voltmeter
72. Hydrogen
73. Gametes
74. Complete dominance
75. Iron rust
76. Genome

✹(4) Correct the underlined words:

1. Carbon dioxide
2. Faster
3. Progesterone
4. Sievert
5. Variable
6. Reduction
7. Negative catalyst
8. Free
9. Chemical
10. Stamen
11. Hereditary
12. Chromosome
13. Voltmeter
14. Adrenalin
15. Petroleum oil
16. Seven
17. Equal
18. Faster
19. Growth
20. Volt
21. Fireworks
22. Kinetic
23. Oxygen
24. Endocrine
25. Thyroxin
26. Slow
27. Metal oxide
28. Petroleum oil
29. Electric potential of conductor
30. Glucagon
31. Red
32. Oxygen
33. Pancreas
34. Ions
35. White
36. Equal
37. Red
38. Becquerel
39. Reactant
40. Dry cell
41. Gene
42. Neutrons
43. Insulin
44. Parallel
45. Ammeter
46. Calcitonin
47. Genes
48. Increasing
49. Silver chloride
50. Reducing agent
51. Badel and Tatum
52. Increase
53. Gigantism
54. Protein
55. Carbon dioxide
56. Iodine
57. Agricultural
58. Voltmeter
59. Watson and crick
60. Electrons
61. Coulomb

✹(5) Give reason for:

1. Due to the decrease in the secretion of thyroxin hormone as a result of the lack of iodine from food as it enters in the hormone's structure.
2. Because zinc come before hydrogen in the chemical activity series, so they replace the hydrogen of acid, while copper comes after hydrogen in the chemical activity series, so it can't replace the hydrogen of acid.
   $Zn + 2HCl \xrightarrow{dil.} ZnCl_2 + H_2\uparrow$
3. Because by increasing the number of reactants molecules, the number of probable collisions between them increases, so the speed of reaction increases.
4. Because magnesium comes before copper in the chemical activity series, so it replaces copper in copper sulphate solution and copper precipitates as a red ppt.
   $Mg + CuSO_4 \longrightarrow MgSO_4 + Cu\downarrow$
5. To prevent cross pollination with other flowers.
6. Because :
   - It is easy to be planted and it grows fast.
   - Its life cycle is short.
   - Its flowers are hermaphrodite, so it can be self-pollinated.
   - It can easily be artificially pollinated (human intervention).
   - It produces large numbers of plants in a generation.
7. Because it's acquired trait that can't be transmitted from a generation to another.
8. Because the oxidase enzyme in sweet potato acts as a catalyst which increases the rate of decomposition of hydrogen peroxide into water and oxygen gas.
9. Due to formation of silver chloride salt which doesn't dissolve in water.
   $NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl\downarrow$
10. Because the target cells that are affected by hormone are located faraway from endocrine glands, so blood is the only way for the hormones to reach them.
11. To reduce the electric potential of the current used and get a suitable electric potential to charge the mobile.
12. Because the reactions of ionic compounds take place between ions, while the reactions of covalent compounds take place between molecules.
13. **Because** copper comes after hydrogen in the chemical activity series, so it can't replace the hydrogen of acid.
14. Because the low temperature in the fridge slows down the speed of the chemical reactions done by bacteria which cause the rot of food.
15. Because the reactions of ionic compounds take place between ions, while the reactions of covalent compounds take place between molecules.
16. Because the pancreas secretes the insulin hormone and the glucagon hormone and the function of each hormone contradicts the function of the other hormone.
17. Because sodium atom loses an electron and changes into positive (+ve) ion, while chlorine atom gains an electron and changes into negative (-ve) ion.
18. Because the gene of the ability to roll the tongue dominates over the gene of the non-ability to roll the tongue if they are both present together in an individual.
19. Because radiation causes changes in the sex chromosomes composition for living organisms.
20. Because the gene of the free ear lobe dominates over the gene of the attached ear lobe if they are both present together in an individual.
21. To control the electric current intensity passing through the circuit and the potential difference in the different parts of the circuit.
22. Because it secretes hormones that regulate the activities of most of other endocrine glands.
23. Because they release unseen rays spontaneous as a result of their atoms' nuclei containing neutrons more than required for their stabilization.
24. Because the target cells that are affected by hormone are located faraway from endocrine glands, so blood is the only way for the hormones to reach them.
25. Due to the increase in the secretion of the growth hormone at childhood.
26. Due to increasing the speed of chemical reaction by increasing the concentration of oxygen gas.
27. To insure that the plant doesn't be self-pollinated.
28. Because :
   - It can be transferred for long distances through wires.
   - It can be changed into a direct current.

29. Because the low temperature in the fridge slows down the speed of the chemical reactions done by bacteria which cause the rot of food.
30. To control the electric current intensity passing through the circuit and the potential difference in the different parts of the circuit.
31. Because the surface area in case of iron filings is larger than that in case of iron block and the speed of chemical reactions increases by increasing the surface area.
32. Because aluminium comes before hydrogen in C.A.S., so it replaces hydrogen of diluted acids.
$2Al + 6HCl \xrightarrow{dil.} 2AlCl_3 + 3H_2\uparrow$
33. Because by increasing the temperature, the number of probable collisions between reactants molecules increases, so the speed of reaction increases.
34. Because the green pod trait dominates over the yellow pod trait in the pea plant according to the principle of complete dominance.
35. Because rice doesn't contain pro-vitamin (A) known as carotene which is converted into vitamin (A) inside the body.
36. Due to the presence of a layer of aluminium oxide (Al_2O_3) on aluminium surface, which takes time to separate from aluminium, which delays the starting of occurrence of the reaction.
37. To obtain a battery, the e.m.f. of it is high.
38. To measure the potential difference across the two terminals of the conductor.

(6) What happen if:

1. The body stops growing, so the person becomes a dwarf.
2. A silvery precipitate of mercury is formed and oxygen gas evolves.
$2HgO \xrightarrow{\Delta} 2Hg + O_2\uparrow$
3. This leads to the damage of bone marrow, spleen , digestive system and the central nervous system.
4. The blue color of copper sulphate disappears and a red precipitate of copper is formed.
$Mg + CuSO_4 \longrightarrow MgSO_4 + Cu\downarrow$
5. The ammeter reading becomes zero and the voltmeter reading becomes the e .m.f. of the battery.
6. A reaction take place and hydrogen gas evolves
$2Na + 2H_2O \longrightarrow 2NaOH + H_2\uparrow + heat$
7. The speed of the chemical reaction increases, due to the increase in the number of probable collisions between reactant molecules.
8. Leads to change in the cells composition which lead to destroy the cell s, and also the chemical composition of the haemoglobin changes, it becomes incapable of carrying oxygen.
9. The individual will show the recessive trait.
10. The person will be diabetic
11. Hydrogen peroxide decomposes (breaks up) rapidly into water and oxygen gas evolves.
12. The speed of the chemical reaction decreases.
13. A black substance of copper oxide is formed, and carbon dioxide gas evolves.
$CuCO_3 \xrightarrow{\Delta} CuO + CO_2\uparrow$
14. A white precipitate of silver chloride is formed.
$NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl\downarrow$
15. The glucose blood level decreases.
16. The electric current will passes from the conductor of high electric potential to that of low electric potential.
17. the first generation will be 100% dominant trait and the second generation will be 75% dominant trait : 25 % recessive trait (for each contrasting trait independently) .
18. All the produced pea plants are hybrid green pods.
19. The chemical reaction which producing the protein that is responsible for appearance of genetic trait not occurs , and so the genetic trait not appear.
20. The number of collisions decreases .
21. The silvery colour of liquid mercury will be formed.
22. An effervescence occurs due to evolving of bubbles of carbon dioxide gas.
$Na_2CO_3 + 2HCl \xrightarrow{dil.} 2NaCl + H_2O + CO_2\uparrow$
23. An electric current will passes from conductor (A) to conductor (B), and stops when the electric potential of both conductors (A) and (B) becomes equal.
24. It can't be able to carry oxygen, and that is from the cellular effects of the nuclear radiation.
25. All the resulting individuals are carrying the dominant trait.

26. This leads to decreasing in secretion of thyroxin hormone and this leads to that the human suffers from simple goiter.
27. Spontaneous decay to reach more stable composition.
28. The speed of chemical reaction increases.
29. The chemical structure of hemoglobin changed and can't be able to carry oxygen.
30. Hormonal disorders for most of the others
    endocrine glands secretion.
31. damage of bone marrow which is responsible for the formation of red blood
    cells.
32. An effervescence happens and the effervescence occurred in case of hot water is faster than in case of cold water.
33. No electric current will pass through the conducting bar.
34. The electric current intensity decreases.
35. A black substance of copper oxide is formed, and water vapour evolves.
    $Cu(OH)_2 \xrightarrow{\Delta} CuO + H_2O\uparrow$
36. The glucose blood level decreases.
37. The speed of the reaction will be decreased.
38. A yellowish white substance of sodium nitrite is formed and oxygen gas evolves.
    $2NaNO_3 \xrightarrow{\Delta} 2NaNO_2 + O_2\uparrow$
39. The resistance increases and the current intensity decreases.
40. It will be reduced and changed into a negative ion and it became an oxidizing agent.
41. Cross-pollination with other flowers will occur.
42. No electric current flows, because there is no potential difference.
43. Its energy increases , so it emits unseen (invisible) radiations to reach a more stable composition
44. Food becomes rotten due to increasing chemical reactions done by bacteria.
45. The electric charges transfer from the second conductor to the first conductor until their electric potential becomes equal.
46. The trait of each pair is inherited independently and all individuals of the first generation appear carrying the dominant traits only and in the second generation , the dominant trait and the recessive trait appear at a ratio of 3 : 1
47. The dominant trait appears.
48. Increasing the number of collisions by increasing the temperature
49. The rate of decomposition of hydrogen peroxide increases.
50. The dominant individuals are hybrid .

✹(10) Define:

1. It is the appearance of a dominant hereditary trait in the individuals of the first generation when two individuals are crossed, one of them carries a pure trait contrasting the trait carried by the other individual.
2. When two pure individuals of any one pair of hereditary traits are different from each other, only the dominant trait appears in the first generation, while the two traits appear in the second generation at a ratio of 3 (dominant trait) : 1 (recessive trait).
3. It plays a main role in food assimilation processes in the body, where it liberates the energy necessary for the human body from food.
4. It stimulates body's organs to respond to emergencies
5. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature
6. It is a reaction between an acid and an alkali to form salt and water.
7. It is the breaking up of bonds in molecules of the reactants and formation of new bonds in the molecules of resultants (products) from the reaction.
8. It is the arrangement of metals in a descending order according to the degree of their chemical activity.
9. It is the spontaneous decay of the atoms' nuclei of radioactive elements that are present in nature in an attempt to achieve a more stable composition.
10. They are parts of DNA present on the chromosomes and they are responsible for appearing the individual's hereditary traits.
11. It is a chemical substance (or a chemical message) that controls and organizes most of the vital activities and functions in the bodies of living organisms.
12. It is the electric current intensity passing through a circuit when a charge of one coulomb passes through a given cross-section in one second.
13. It is a substance which changes the rate of the chemical reaction without changing or being used up.
14. When two pure different individuals bearing two pairs or more of alternative (contrasting) traits are crossed, the trait of each pair is inherited independently of the others and appears in the second generation at a ratio of 3 (dominant trait) : 1 (recessive trait).
15. It is the condition (state) of an electric conductor that shows the transfer of the electricity from or to it when it is connected to another conductor.
16. It is a genetic map that shows the complete set of genes present on the human chromosomes.

✹(8) Problems

1

$$P = \frac{W}{q} = \frac{66000}{300} = 220 \text{ volt.}$$

2

1. e.m.f. of the battery = e.m.f. of one cell X no. of cells = 1.5 × 3 = 4.5 volt
2. e.m.f. of the battery = e.m.f. of one cell = 1.5 volt

3

1. Curve **(C)** 2. Curve **(B)** 3. Curve **(A)**

4

$$\because q = \frac{W}{V}$$

$$\therefore q = \frac{240}{40} = 6 \text{ coulomb}$$

$$\because I = \frac{q}{t}$$

$$\therefore I = \frac{6}{2} = 3 \text{ ampere}$$

5

First way :

Second way :

6

1. 6 2. 8

7

1. a 2. c 3. c 4. c

8

1. (A) chemical formula is $Cu(OH)_2$
 (B) chemical formula is H_2
 (C) chemical formula is Cu
2. Reaction (1) is thermal decomposition reaction.
 Reaction (2) is simple substitution reaction.
 Reaction (3) in oxidation and reduction reaction.
3. Reduction process.

9

P RR × rr

G R r

F Rr

Ratio 100 % red flowers

10

1. (A) is H_2O (B) is $H_2\uparrow$
2. In general , we detect H_2 gas by approching a burning match to it, so it burns with a pop sound.
3. Reaction No. (1) is simple substitution reaction.
 Reaction No. (2) is oxidation and reduction reaction.

11

1. Rr 2. Rr – rr
3. Yes, because the dominant trait appear in individuals of first generation at a ratio of 100% and in the second generation at a ratio of 3 (dominant trait) : 1 (recessive trait).

12

1. Because silver comes after hydrogen in C.A.S.
2. Due to the presence of aluminium oxide layer, which take time till separates and then the metal becomes exposed to the acid.
3. The speed of the chemical reaction increases, due to the increase in the surface area of the reactant.
4. Hydrogen gas.

13

$q = I \times t = 2 \times 5 \times 60 = 600$ coulomb

work done (W) = $V \times q = 2 \times 600 = 1200$ joule

14

P Tt × Tt

G T t T t

F TT Tt Tt tt

27 members with long wings 9 members with short wings

15

$$\because I = \frac{V}{R}$$

$$\therefore I = \frac{110}{1100} = 0.1 \text{ ampere}$$

$$\because q = I \times t$$

$$\therefore q = 0.1 \times 600 = 60 \text{ coulomb}$$

16

1. 1.5 v 1.5 v 1.5 v

2. 1.5 v 1.5 v 1.5 v 1.5 v

17 Figure (c).

18
1. Sodium carbonate with diluted Hydrochloric acid, produce CO_2 gas which turbid clear limewater.
2. Sodium with water, produce H_2 gas which burning with a pop sound.

19
1. $3\ N_2$
2. (1) Nitrogen gas ($3N_2$)
   (2) Sodium ($2N_2$)
   (3) Sodium azid ($2\ Na\ N_3$)
3. It is one of the most important safety means of car, where it inflated by nitrogen gas at an extreme speed on the occurrence of car accident.

20
$\because R = \frac{V}{I}$ $\quad \therefore R = \frac{6}{0.5} = 12$ ohm

$, \because I = \frac{V}{R}$ $\quad \therefore I = \frac{12}{12} = 1$ ampere

21
P: TtAa × ttaa
G: TA, Ta, tA, ta × ta
F: TtAa, Ttaa, ttAa, ttaa
- TtAa: Long-stemmed red flower
- Ttaa: Long-stemmed white flower
- ttAa: Short-stemmed red flower
- ttaa: Short-stemmed white flower

22 $W = v \times q = 50 \times 20 = 1000$ Joule

23
1. direct – dry cell – chemical.
2. alternating – dynamoc – mechanical.

24
$I = \frac{q}{t} = \frac{42}{30} = 1.4$ ampere

$\therefore$ The filament of the electric lamb doesn't burn, because the electric current intensity passing through it (1.4 ampere) is less than that (1.5 ampere) which it can sustain.

25
1. $NaNO_3$ decomposed by heat, produce yellowish white substance and oxygen.
2. Al replace the hydrogen of the acid after a while, salt is formed and hydrogen gas evolves.

26
1. $2N_2O_5 \longrightarrow 4NO_2 + O_2 \uparrow$
2. The graph (1) is N_2O_5
   The graph (2) is O_2
   The graph (3) is NO_2

27 1. CuO 2. Cu 3. $H_2 \uparrow$

28
1. Sodium sulphate (Na_2SO_4).
2. By the disappearance rate of blue copper sulphate solution, or the appearance rate of blue copper hydroxide precipitate.
3. $Cu(OH)_2 \xrightarrow{\Delta} CuO \downarrow + H_2O$
   $Cu(OH)_2$: copper hydroxide (blue colour); CuO: copper oxide (black colour)

29
$\because V = R \times I$

$\therefore V = 2 \times 3 = 6$ volt

So the connection of four electric cells as in the opposite figure.

their total e.m.f = 2 + 2 + 2 = 6 volt

2 v 2 v 2 v 2 v A B

30
$\because I = \frac{q}{t}$

$\therefore = \frac{6000}{5 \times 60} = 20$ ampere

31
1. Hydrogen gas.
2. Simple substitution reaction.
3. No reaction.

32
1. **First :**
   (1) Thermal decomposition reaction.
   (2) Simple substitution reaction.
   (3) Oxidation and reduction reaction.
   Second :
   (4) CuO (copper oxide).
   (5) H_2 (Hydrogen gas).
   (6) Cu (copper).

33
P: Yy × yy
G: Y, y, y, y
F: Yy, Yy, yy, yy
- Yy, Yy: Hybrid yellow seeds
- yy, yy: Pure green seeds

34
P: RR × rr
G: R, r
F: Rr
Ratio: 100 % red flowers

35
1. The oxidation process :
   When (Mg) loses two electrons, and converted into a positive ion.
   , the reduction process :
   when (2Cl) gain two electrons, and converted into a negative ion.
2. The oxidizing agent : chlorine atoms.
   , the reducing agent : magnesium atom.

36
1. Tt
2. tt

37
1. The rheostat, it used to control the electric current intensity flowing through the circuit and the potential difference in the different parts of the circuit.
2. (1) slider
3. cepper bar

38
1. $Fe + 2HCl \longrightarrow FeCl_2 + H_2\uparrow$
2. The surface area of the reactant.
3. No reaction ocurs.

39
1. $FeCl_2$
2. The speed of the chemical reaction increases.

40
Sodium atom is oxidized because it loses an electron, while chlorine atom is reduced because it gains an electron which lost from Sodium atom.

	K	L	M
Na	2	8	1
Cl	2	8	7

41
- Oxidizing agent is CuO because it loses oxygen and reduced to copper.
- Reducing agent is H_2 because it gains oxygen and oxidized to water.

42
(1) Tt (2) t (3) Tt

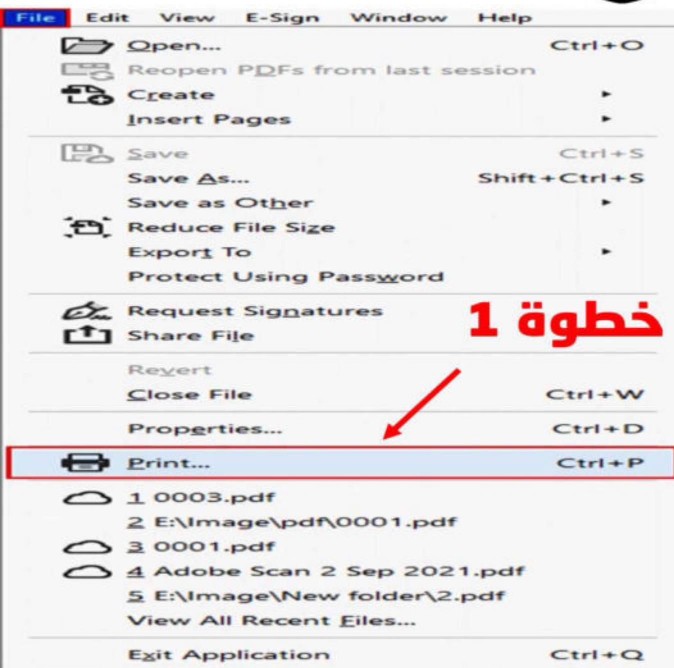
43

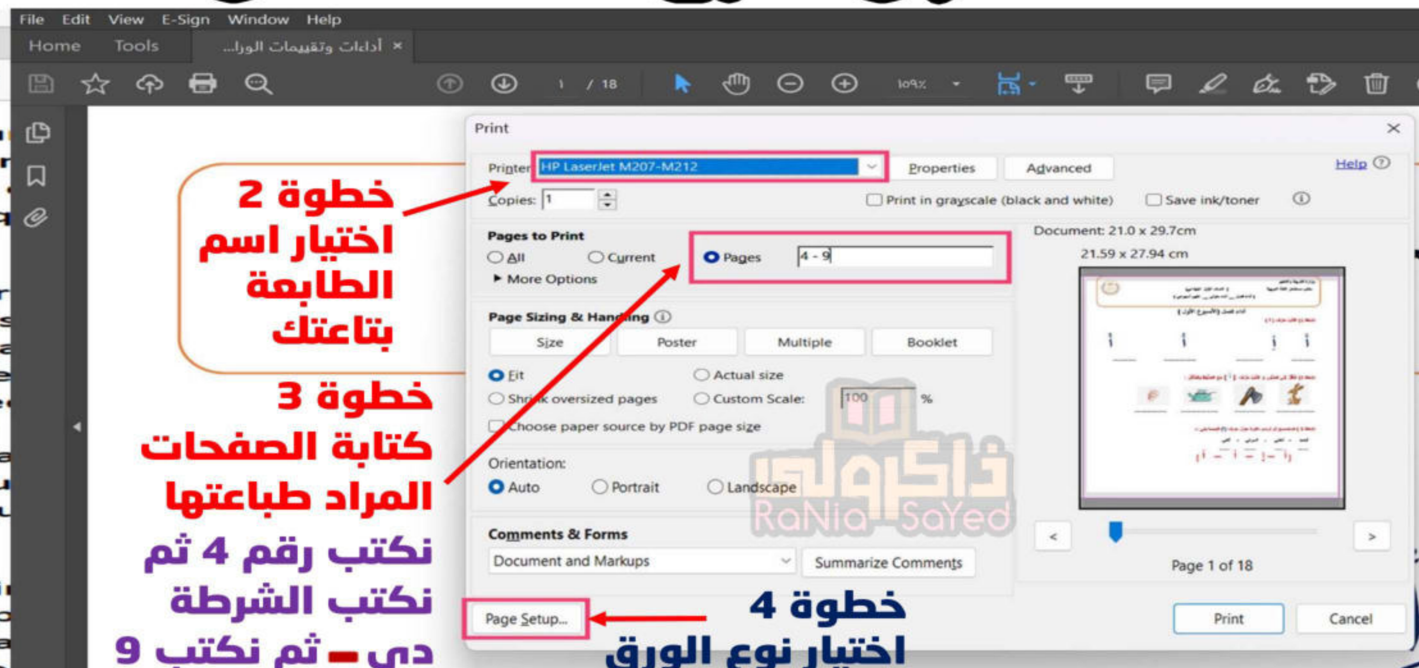
$$R = \frac{V_1}{I_1} = \frac{6}{0.5} = 12 \text{ ohm.}$$

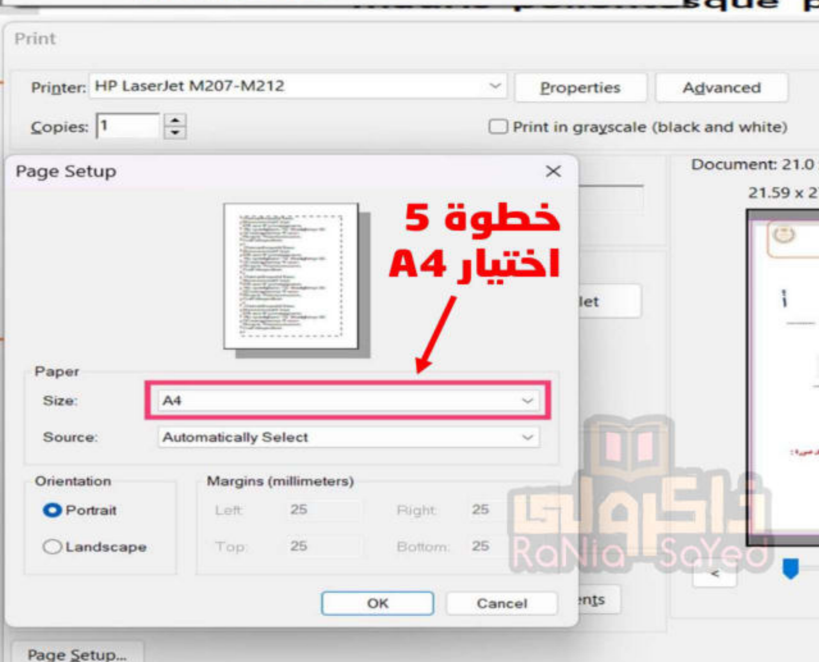
$$I_2 = \frac{V_2}{R} = \frac{12}{12} = 1 \text{ ampere.}$$

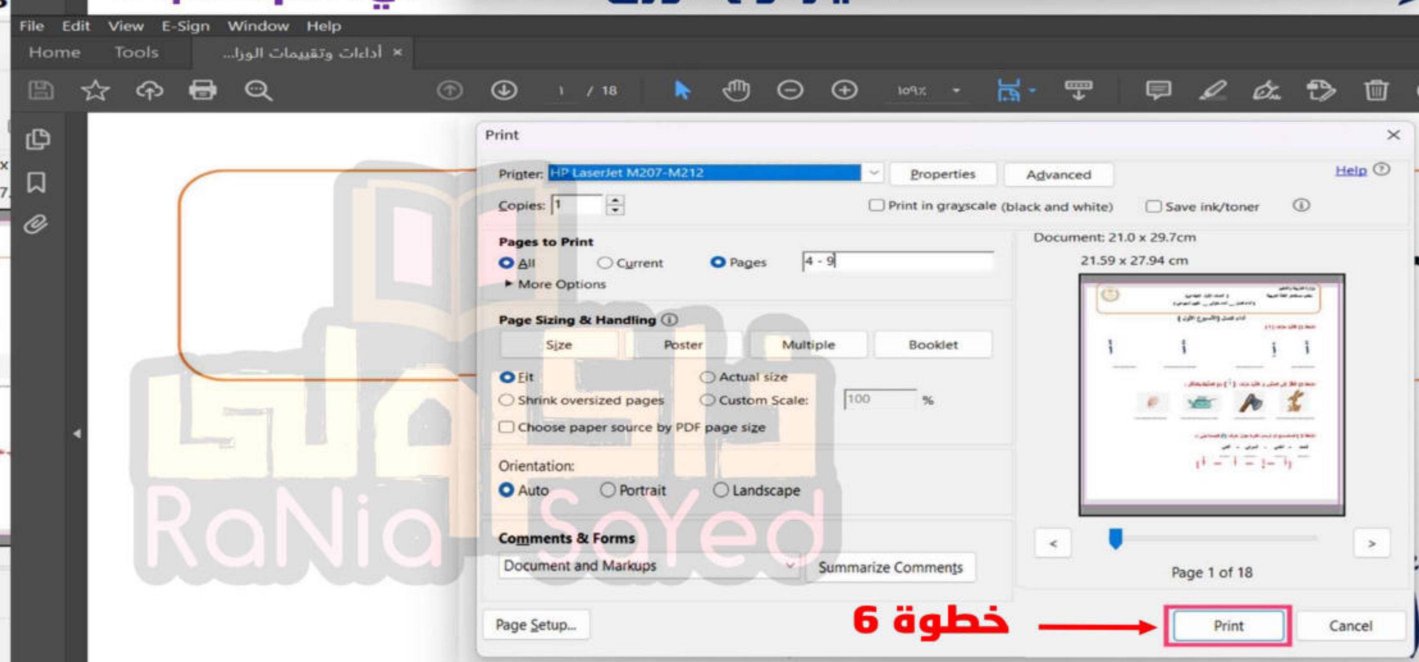
كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9









المراجعة رقم (2)

الترم الثانى





Choose the correct answer :

1- The measuring unit for absorbed nuclear radiation is the …………………….

a. Joule b. <u>Sievert</u> c. Coulomb d. Ampere

2- Direct current can be produced from ………………………….

a. <u>Electrochemical cells</u> b. electric generator c. electric power stations. d. electromotive

3- The reaction of oil with caustic soda is one of the ………………… reactions.

a. very fast b. <u>relatively slow</u> c. very slow. d. fast

4- A hormone called ………….. stimulates the release of stored sugar from the liver.

a. estrogen b. insulin c. <u>glucagon</u> d. thyroxin

5- The ……… effects of radiation are a result of changing the sex chromosomes of the cells.

a. physical b. <u>genetic</u> c. cellular d. chemical

6- On heating red mercuric oxide, it decomposes into ………………….

a. oxygen b. mercury c. <u>oxygen and mercury</u> d. no correct answer

7- At the beginning of the reaction the percentage of the reactant concentration equal ……

a. <u>100%</u> b. 0% c. 50% d. no correct answer

8- The mathematical relation of the Ohm's law is …………………….

a. <u>R = V / I</u> b. I = R / V c. R = I x V d. no correct answer

9- The scientist who discovers radioactivity phenomenon was ……………………..

a. Ohm b. <u>Becquerel</u> c. Ampere d. Mendel

10-The two factors of hereditary trait are similar in the individual ……………………..

a. pure b. hybrid c. recessive d. <u>pure and recessive</u>

11- Four similar electric cells, are connected in series each one has e.m.f. of 1.5 volt, so the total e.m.f. equal ……………. volt a. 3 b. <u>6</u> c. 1.5 d.12

12- Measuring unit of the quantity of electricity is …………………………

a. ampere b. <u>coulomb</u> c. volt d. joule

13- …………… hormone, liberates the energy necessary for the body from food.

a. Growth b. Estrogen c. <u>Thyroxin</u> d. Progesterone

14- All the following are radioactive elements except ……………………..

a. radium b. uranium c. <u>iron</u> d. cesium

15- By adding silver nitrate solution to sodium chloride solution, a …… precipitate is formed.

a. black b. <u>white</u> c. blue d. brown

16- At the end of the chemical reaction, the concentration of the reactants is ……………..

a. zero **b. 25%** **c. 50%** **d. 100%**

17- The substance which changes the rate of the reaction without being changed is known ...

a. oxidizing agent **b. active agent** **c. catalyst** **d. reducing agent**

18- Which of the following traits is dominant in human? …………………..

a. straight hair **b. blue colored eyes** **c. the wide eyes** **d. presence of freckles**

19- The hormone which simulates body organs to respond for emergencies is …………….

a. insulin **b. glucagon** **c. estrogen** **d. adrenalin**

20- The ……………… trait is always pure.

a. recessive **b. dominant** **c. hybrid** **d. hereditary**

21- When added copper filings to diluted hydrochloric acid ……………………

a. copper oxide is formed **b. copper chloride is formed**

c. hydrogen gas is formed **d. no chemical reaction occurs**

22- The hormone that control the calcium level in the blood is ………….. hormone.

a. calcitonin **b. adrenalin** **c. estrogen** **d. insulin**

23- Limewater turbid when ……………… gas passes through it.

a. SO_3 **b. H_2** **c. CO_2** **d. O_2**

24-The measuring unit for absorbed nuclear radiation is the ……………………

a. Joule **b. Sievert** **c. Coulomb** **d. Ampere**

25- From the properties of direct current is …………………………..

a. change intensity **b. change direction**

c. constant intensity and direction **d. change intensity and direction**

26-The chemical reactions of ionic compound are ……………………..

a. slow **b. fast** **c. between molecules** **d. (a) and (c) together**

27- …………… hormone, liberates the energy necessary for the body from food.

a. Growth **b. Estrogen** **c. Thyroxin** **d. testosterone**

28- Enzymes act as ……………. in most of the biological processes.

a. oxidizing agent **b. detergent agent** **c. reducing agent** **d. catalysts**

29- On crossing male and female their genotype (Bb), so the genotype (BB) is may produced in their offspring at a percentage of ……………………

a. 100% **b. 50%** **c. 75%** **d. 25%**

30- The hormone that promotes the growth of endometrium is the ……………. hormone.
a. testosterone b. progesterone c. estrogen d. growth

31- All the following elements replace hydrogen of the diluted acid except ……………..
a. Al b. Zn c. Au d. Sn

32- Calcitonin hormone controls ……………. level in the blood.
a. potassium b. oxygen c. calcium d. iron

33- The scientist who discovers radioactivity phenomenon was ……………………..
a. Ohm b. Becquerel c. Newton d. Mendel

34- The scientists …………………… make a model of the DNA molecule.
a. Badel and Tatum b. Newton and Mendel
c. Watson and Crick d. Becquerel and Moshrafa

35- The scientists ……… discovered the means of how the genes control the appearance of genetic traits.
a. Badel and Tatum b. Newton and Mendel
c. Watson and Crick d. Becquerel and Aly Moshrafa

36- When magnesium replaces copper in a solution of one of its salts, a …………… precipitate is formed.
a. black b. green c. red d. blue

37- The two factors of hereditary trait are similar in the individual ……………………..
a. pure b. hybrid c. recessive d. (a) and (c) together

38- In dynamo, …………….. energy is converted into electric energy.
a. magnetic b. mechanical c. chemical d. light

39- Oxidation is a chemical process which increases ……… percentage in substance.
a. hydrogen b. oxygen c. helium d. fluorine

40- From the recessive hereditary traits in the human is the …………………..
a. smooth hair b. presence of dimples c. wide eyes d. brown eyes

41- The use of the sliding rheostat is ………………. of the electric circuits.
a. change the value of resistance b. measurement of current intensity
c. measurement of potential difference d. measurement of electromotive force

42- A reaction between acid and alkali to form salt and water is known ………… reaction.
a. reduction b. neutralization c. oxidation d. simple substitution

43-The measuring unit for absorbed nuclear radiation is the …………………….
a. Joule b. Sievert c. Coulomb d. Ampere

44- The scientists ……… discovered the means of how the genes control the appearance of genetic traits.

a. Badel and Tatum b. Newton and Mendel

c. Watson and Crick d. Becquerel and Aly Mosharafa

45- The mathematical relation of the Ohm's law is …………………….

a. R = V / I b. I = R / V c. R = I x V d. no correct answer

46- The …………….. hormone is stimulates the release of glucose sugar from the liver.

a. estrogen b. insulin c. glucagon d. thyroxin

47- The increase in concentration of reactants …......................... the number of collisions between molecules.

a. decreases b. increases c. equal d. no correct answer

48- Mendel covered …………… of the pistils of a pea plant, to avoid cross- pollination.

a. sepals b. stigmas c. stamens d. petals

49- Mendel removed …………… of a pea plant, to avoid self-pollination.

a. sepals b. stigmas c. stamens d. petals

50- On connecting 5 electric cells have the same e.m.f. on parallel, the e.m.f. of each cell is 2.5 volts, so the total e.m.f. equals ………………. volts.

a. 2.5 b. 5 c. 7.5 d. 12.5

51- A reaction between acid and alkali to form salt and water is known ………… reaction.

a. reduction b. neutralization c. oxidation d. simple substitution

52- Genes controls in hereditary traits for living organisms by producing ……………..

a. hormones b. enzymes c. fats d. vitamins

53- Ohmmeter is a device used to measure …………………………

a. electric resistance b. current intensity c. potential difference d. e.m.f.

54- Exposure to large dosage of nuclear radiation for short time affect ……………………..

a. two lungs b. larynx c. bone marrow d. muscles

55- All the following affect on speed of chemical reactions except ……………………

a. reactants concentration b. nature of reactants

c. reaction temperature d. nature of products

56- In the following reaction : $H_2 + CuO \longrightarrow Cu + H_2O$ …………… acts as reducing factor.

a. H_2O b. CuO c. H_2 d. Cu

57- Sodium replaces the following metals in their salt solutions except for ………………

a. copper b. potassium c. magnesium d. zinc

58- Mendel removed …………… of a pea plant, to avoid self-pollination.

a. sepals b. stigmas c. stamens d. petals

59- Sweet potato has oxidase enzyme to decompose ……………… faster.

a. hydrogen chloride b. sodium chloride c. hydrogen peroxide d. sodium carbonate

60- The measuring unit for absorbed nuclear radiation is the …………………….

a. Joule b. Sievert c. Coulomb d. Ampere

61- The …………. is one example of electrochemical cells.

a. dynamo b. rheostat c. voltmeter d. dry cell

62- Substance that gives oxygen or removes hydrogen is called ………………..

a. oxidizing agent b. catalyst c. reducing agent d. oxidation

63- From the dominant traits in human being …………………….

a. straight hair b. wide eyes c. absence of dimples d. attached ear lobe

64- Air bag contains sodium …………………

a. sulphate b. azid c. oxide d. carbonate

65- $Zn + 2HCl \longrightarrow$ …………………. $+ H_2$

a. O_2 b. CO_2 c. $ZnCl_2$ d. H_2O

66- Carbon dioxide evolves during thermal decomposition of ………………. compound.

a. HgO b. $CuSO_4$ c. $CuCO_3$ d. $Cu(OH)_2$

67- On adding manganese dioxide to hydrogen peroxide solution. So manganese dioxide quantity …………………..

a. increase b. decrease c. doesn't changed d. no correct answer

68- The gland that secretes hormones raises the level of sugar in the blood is …………..

a. pancreas b. glucagon c. insulin d. all the previous

69- The measuring unit of electric charges is …………………………..

a. coulomb b. ampere c. volt d. ohm

70- Function of …………….. hormone is contradict the function of insulin hormone.

a. testosterone b. glucagon c. adrenalin d. growth

71- The recessive trait appears from ………………………..

a. two dominant genes b. a dominant gene

c. two recessive genes d. a recessive and a dominant gene

72- In the following reaction : $2Br^- \longrightarrow Br_2 + 2e^-$ what will happen to bromide ion? ……..….

a. oxidation b. reduction c. oxidation and reduction d. no correct answer

73- When copper sulphate is heated, a ………………. deposit is formed.

a. black b. green c. blue d. reddish

74- From the dominant traits in human being …………………….

a. straight hair b. narrow eyes c. no freckles d. attached ear lobe

75- A reaction between acid and alkali to form salt and water is known ………… reaction.

a. reduction b. neutralization c. oxidation d. simple substitution

76- The most active metal from the following, according to chemical activity series is ……..

a. copper b. sodium c. hydrogen d. aluminium

77- The hormone that is responsible for the appearance of secondary male sex characteristics is the ……………….. hormone.

a. insulin b. progesterone c. testosterone d. adrenaline

78- When hydrochloric acid reacts with sodium carbonate, the produced gas …………..

a. turbid limewater b. burn with pop sound c. increases ignition d. red brown color

79- The ratio between potential difference and electric current intensity equal to …………

a. e.m.f. b. work done c. quantity of electricity d. electric resistance

80- If electric current intensity of 2 ampere flow in 2 minutes then the quantity of electricity = …………. coulomb. a. 4 b. 12 c. 120 d. 240

81- The chemical formula of nitrogen pentaoxide gas is ………………………..

a. N_2O_5 b. $5NO_2$ c. N_5O_2 d. NO_2

82- The radiologist should not be exposed to nuclear radiation in amounts more than ……… milli Sievert per year. a. 1 b. 10 c. 15 d. 20

83- The public should not be exposed to nuclear radiation in amounts more than ……… milli Sievert per year. a. 1 b. 10 c. 15 d. 20

84- The increase of secretion in the growth hormone lead to ………………………..

a. dwarfism b. fatness c. gigantism d. inflation

85-The time needed for ionic reactions is ……………. of covalent reactions.

a. more than b. less than c. equal d. more than or equal

86- The flow of electric charges through a metal wire represents …………………

a. resistance b. electric current intensity c. electric current d. potential difference

87- Mendel’s second law is known as law of ………………….. of factors.

a. independent assortment b. segregation c. fusion d. disappearance

88- Mendel's first law is known as law of ………………….. of factors.

a. independent assortment b. segregation c. fusion d. disappearance

89- Sodium azid in air bags in car decomposes into …………… gas.

a. H_2 b. O_2 c. CO_2 d. N_2

90- The reaction : $Cl_2 + 2e^- \longrightarrow 2Cl^-$ represent ……………….. process.

a. oxidation b. reduction c. decomposition d. substitution

91- The hormone which simulates body organs to respond for emergencies is …………….

a. insulin b. glucagon c. estrogen d. adrenalin

92- To transfer electric charge of 10 coulomb between two points the potential difference between them is 20 volts, …………… joules are needed.

a. 40 b. 2 c. 20 d. 200

93- The hormone that decreases the sugar level in the blood is ……………..

a. Insulin b. glucagon c. adrenalin d. calcitonin

Write the scientific term for each of the following statements :

1. The breaking up of bonds in reactants and forming of new bonds in the products. (chemical reaction)
2. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature. (Ohm's law)
3. Chemical reactions in which a catalyst speed up their rate. (positive catalytic reaction)

4. The arrangement of metallic elements in a descending order according to their chemical activity. (chemical activity series)

5. The force that binds the nucleus components and overcomes the repulsion force between the positively charged protons. (nuclear binding force)

5. The change in concentration of the reactants and products at a unit time. (speed of chemical reaction)

6. Reaction between acid and alkali forming salt and water. (neutralization reaction)
7. A chemical process which increase oxygen percentage in the substance. (oxidation)
8. A chemical process which decrease oxygen percentage in the substance. (reduction)
9. A disease that occurs due to increase in secretion of thyroxin hormone. (exophthalmic goiter)
10. They are chemical reactions which involve the breaking up of the compound into its simple elements or compounds by the effect of heat. (thermal decomposition reaction)
11. It is value of the work done to transfer a quantity of electric charges of one coulomb between the two poles of this conductor. (potential difference)
12. Elements whose atom's nuclei contain a number of neutrons more than the number required for its stability. (radioactive elements)
13. The flow of electric negative charges in a conducting material. (electric current)
14. The characters transmitted from one generation to another. (hereditary traits)
15. The traits which are not transmitted from one generation to another. (acquired traits)
16. They are parts of DNA on the chromosomes and control the hereditary traits of the individual. (genes)
17. Spontaneous decaying of the atom's nuclei of some elements to achieve more stable composition. (radioactivity phenomenon)
18. It is the quantity of electric charges in coulomb flowing through a cross-section of the conductor in one second. (current intensity)
19. Ductless glands that secrete their hormones directly in the blood. (endocrine glands)
20. The state of a conductor that determines the transfer of electricity from or to it. (electric potential of conductor)
21. The charge that transfers with a constant electric current its intensity one ampere in one second. (coulomb)

22. Chemical message that control and organizes most of the vital activities and function in the body organs. (hormones)
23. A substance which increases rate of chemical reactions without being consumed. (catalyst)
24. The appearance of a dominant hereditary trait in individuals of first generation when two individuals crossed, one of them carrying pure hereditary trait contrasting trait carried by the other individual. (principle of complete dominance)
25. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature. (Ohm's law)
26. Organs secrete hormones directly into blood stream. (endocrine glands)
27. The substance formed by gene and it is responsible for occurrence of a certain chemical reaction. (enzyme)
28. The substance which gives oxygen or take hydrogen away during a chemical reaction. (oxidizing agent)
29. The trait that appears in all individuals of the first generation in Mendel's experiments. (dominant trait)
30. Chemical reactions in which an element substitutes another one. (simple substitution reaction)
31. The potential difference between the two poles of the battery when the electric circuit is open. (electromotive force)
32. The hormone which secreted from the pituitary gland to controls the speed rate of growth of muscles and bones. (growth hormone)
33. The change that appear on a living organism when exposed to nuclear radiations. (physical effects)
34. The individual who carries two genetic factors one of the dominant trait and the other of the recessive trait. (hybrid individual)
35. The resistance of a conductor that allows the passing of electric current of 1 ampere through it when the potential difference between its two ends is 1 volt. (ohm)
36. The hormone which is responsible for the appearance of the secondary male sex characters. (testosterone)
37. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature. (Ohm's law)
38. The measuring unit for absorbed nuclear radiation. (Sievert)
39. A chemical process in which an atom of the element gains one electron or more. (reduction)
40. The science that research in the similarities and difference between the individuals in the same species. (Mendel)
41. Chemical reactions in which exchange occurs between the ions of two compounds to form two new compounds. (double substitution reaction)

42. The individual who carries a similar pair of hereditary genes whether dominant or recessive. (pure individual)
43. An increase or decrease of secretion in one of the hormones as the responsible gland doesn't work properly. (hormone disorder)
44. The trait that disappeared in the first generation. (recessive trait)
45. Chemically consists of a nucleic acid DNA combined with proteins. (chromosomes)
46. The opposition that the electric current faces during its passage through a conductor. (electric resistance)
47. A disease caused as a result of decreasing the secretion of the growth hormone at the childhood. (dwarfism)
48. The trait which are unable to transmit from a generation to another. (acquired trait)
49. An electric current is suitable for use in electroplating processes. (direct current)
50. An electric current is not suitable for use in electroplating processes. (alternating current)
51. The cells which the hormones affect and they are located away from the endocrine gland that secretes hormone. (target cell)
52. The cells by which the hereditary traits are transmitted from parents to offspring. (gametes)
53. They are chemical substance produced by the body of living organism act as catalysts that increase the speed of biological reactions. (enzyme)
54. It is value of the work done to transfer a quantity of electric charges of one coulomb between the two poles of this conductor. (potential difference)
55. The substance which loses one electron or more during a chemical reaction. (reducing agent)
56. The enzyme which is found in sweet potato and accelerates the decomposition rate of hydrogen peroxide. (oxidase enzyme)
57. The metallic can exists in most modern cars to treat the harmful gases emitted from the engine. (catalytic converter)
58. Parts of DNA that are present on the chromosomes and carry the hereditary traits of the individual. (genes)
59. The opposition that the electric current faces during its passage through a conductor. (electric resistance)
60. Special structure by which hereditary traits transferred from parents to offspring. (gametes)
61. Used in some electric circuits to control current intensity as the resistance directly proportional with the length of wire. (rheostat)
62. Chemical reactions in which a catalyst decrease their rate. (negative catalytic reaction)
63. The substance which gives oxygen or takes hydrogen away during a chemical reaction. (oxidizing agent)

64. **The hormone that is responsible for the appearance the male secondary sex characters.** **(testosterone)**

65. **A chemical process in which an atom loses one electron or more in a chemical reaction.** **(oxidation)**

66. **It is an electric current with constant intensity and flow in one direction through the electric circuit.** **(direct current)**

67. **The substance which gains one electron or more during a chemical reaction.** **(oxidizing agent)**

68. **The substance which takes oxygen away or gives hydrogen during a chemical reaction.** **(reducing agent)**

69. **They are changes in the sex chromosomes composition which result in abnormal birth.** **(genetic effect of radiation)**

70. **They are changes in the cell composition which lead to destroying the cells.** **(cellular effect of radiation)**

71. **They are atoms of the same element with the same number of protons and with different number of neutrons.** **(isotopes)**

72. **It is an electric current with variable intensity and flow in two opposite directions through the electric circuit.** **(alternating current)**

73. **The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature.** **(Ohm's law)**

74. **It is the quantity of electric charges in coulomb flowing through a cross-section of the conductor in one second.** **(current intensity)**

75. **They are chemical reactions which involve the breaking up of the compound into its simple elements or compounds by the effect of heat.** **(thermal decomposition reaction)**

76. **The device used to measure the electric current intensity.** **(Ammeter)**

77. **The device used to measure the potential difference of a conductor.** **(Voltmeter)**

78. **The device used to measure the electromotive force of the battery.** **(Voltmeter)**

79. **The scientists make a model of the DNA molecule. (Watson and Crick)**

80. **The scientists discovered how the genes control the appearance of genetic traits.** **(Badel and Tatum)**

81. **The scientist who discovers radioactivity phenomenon** **(Becquerel)**

Rewrite the following statement after correcting the underline word :

1- Mendel's second law is called the law of segregation of factors.
(independent assortment)
2- Most metal carbonates decompose by heat to metal oxide and nitrogen gas evolves.
(carbon dioxide)
3- The reactions of ionic compounds are slower than those of the covalent compounds.
(faster)
4- Estrogen hormone promotes the growth of endometrium. (progesterone)
5- Ohm is the measuring unit for absorbed nuclear radiation. (Sievert)
6- Alternating current is characterized by constant intensity and direction.
(variable)
7- Oxidation is a chemical process in which an atom gains one electron or more.
(reduction)
8- In positive catalysts reaction, catalyst is used to slow down the chemical reaction.
(negative catalysts)
9- The acquired traits are transmitted from a generation to another. (hereditary)
10- Genes are parts of DNA found in the cytoplasm of the cell. (nucleus)
11- Dwarfism is a disease caused by decreasing of secretion in the calcitonin hormone.
(growth)
12- On heating copper hydroxide, we obtain copper and hydrogen.
(copper oxide – water vapor)
13- The attached ear lobe from dominant hereditary trait. (free)
14- In the electric cell the kinetic energy changes to electric energy. (chemical)
15- Mendel removed the petals of pea flowers to prevent self-pollination.(stamen)
16- The radioactive phenomenon was discovered by the scientist ohm. (Becquerel)
17- The Ammeter is connected in parallel in the electric circuit. (Voltmeter)
18- The skin color is an acquired trait. (hereditary)
19- On fearing and anger, the secretion of thyroxin hormone increases. (adrenalin)
20- The pure individual who carries a pair of genes, one of dominant character and another of recessive character. (hybrid)
21- The measuring unit of absorbed nuclear radiation is the volt. (Sievert)
22- Thyroid gland secretes a hormone that organizes the growth and development of sexual organs in the human body. (pituitary)
23- Some chemical reactions are very slow takes millions of years as iron rust.
(petroleum oil)

24- Mendel's first law is known as the law of <u>independent assortment</u> of factors. (segregation)

25- From the recessive traits in the pea plant the <u>swollen</u> pod shape. (sinuous)

26- Mendel chose <u>ten</u> hereditary traits in the pea plant to perform his experiments. (7)

27- From <u>military</u> uses for the nuclear energy in medical field to treat some diseases. (peaceful)

28- By using 3gm of catalyst in an experiment. Its mass after finishing the reaction is <u>less than</u> 3gm. (equal)

29- Rate of reaction of the dilute hydrochloric acid with iron filing is <u>slower</u> than that with the same mass of a piece of iron. (faster)

30- Gigantism is a disease caused by increasing of secretion in the <u>insulin</u> hormone. (growth)

31- Metals substitute <u>oxygen</u> of acid (water) to produce the metal hydroxide. (hydrogen)

32- The measuring unit of the electromotive force for the electric cell is <u>ampere</u>. (volt)

33- The <u>iron rust</u> is a fast chemical reaction. (fireworks)

34- The <u>chemical</u> energy can be converted to electrical energy by using the electric generator (dynamo). (mechanical)

35- Nitrogen pentoxide breaks up into nitrogen dioxide gas and <u>nitrogen</u> gas. (oxygen)

36- Genes are parts of DNA found in the <u>cytoplasm</u> of the cell. (nucleus)

37- Hormones are secreted in the body by some organs called <u>ductile</u> glands. (endocrine)

38- The transference of the electric charges between two conductors depends on the <u>current intensity</u> between the two conductors. (potential difference)

39- The <u>estrogen</u> hormone liberates the needed energy from the food stuff. (thyroxin)

40- The reactions of the covalent compounds are <u>fast</u>. (slow)

41- The substance which loses one or more electrons in the chemical reaction is called <u>catalysts</u>. (reducing agent)

42- On adding sodium hydroxide solution to copper sulphate solution, <u>blue</u> sodium sulphate is formed. (colorless)

43- The reactions which take place inside the Earth to form <u>iron rust</u> may take millions of years. (petroleum oil)

44- Current intensity is the state of an electric conductor that shows the transfer of electricity from or to it, when it is connected to another conductor. (electric potential)

45- Estrogen hormone promotes the growth of endometrium. (progesterone)

46- When the blood sugar level decreases, the pancreas secretes the insulin hormone. (glucagon)

47- Genes are DNA parts present on the protein in the nucleus of the cell. (chromosomes)

48- The maximum safe does of nuclear radiation which should a public not exceed 20 milli Sievert per year. (1)

49- The iron element shares in composing of thyroxin hormone. (iodine)

50- Adrenalin hormone promotes the growth of endometrium. (progesterone)

51- On adding a piece of magnesium to copper sulphate solution, a black precipitates is formed. (red)

52- The reactions of ionic compounds are slower than those of the covalent compounds. (faster)

53- Nitrogen pentoxide breaks up into nitrogen dioxide gas and nitrogen gas. (oxygen)

54- On decreasing of sugar level in the blood, the liver responds by secreting glucagon hormone. (pancreas)

55- The ionic compounds are fast in their reactions, because they decompose into molecules that easily share in the reaction. (ions)

56- When we add silver nitrate solution to sodium chloride solution, a black precipitate is formed. (white)

57- The electromotive force of three similar cells connected in parallel is twice the electromotive force of one cell. (equal)

58- The radioactivity phenomenon was discovered by the scientist Mendel. (Becquerel)

59- Rate of chemical reaction depend on the concentration of the products. (reactants)

60- Mendel's first law is known as the law of independent assortment of factors. (segregation)

61- Dynamo converts light energy into electric energy. (mechanical)

62- The electric current intensity is directly proportional to the resistance at constant temperature. (potential difference)

63- The traits that are not transmitted from one generation to another are called genetic traits. (acquired)

64- The testosterone hormone responsible for the appearance of the female secondary sex characters. (male)

65- The electric current that produced from the dynamo flows in one direction. (dry cell)

66- Each chromosome produces a special enzyme which is responsible for producing a special type of proteins. (gene)

67- Mendel's second law is called the law of segregation of factors. (independent assortment)

68- The nuclei of radioactive elements contain number of protons more than the number required for its stability. (neutrons)

69- The estrogen hormone is secreted on increasing percentage of glucose sugar in the blood. (insulin)

70- For public, the maximum safe does of nuclear radiation should not exceed 20 milli Sievert per year. (1)

71- Voltmeter is connected in the electric in series. (parallel)

72- Pituitary gland exists below the pancreas. (brain)

73- Ohmmeter is used to measure the current intensity. (Ammeter)

74- Thyroid gland exists in the front of the kidney on both sides of the ureter. (neck - trachea)

75- Adrenal gland located adhering to the top of pancreas. (kidney)

76- Thyroxin hormone stimulates body's organs to respond to emergencies as fear and anger. (adrenalin)

Give reasons for:

1. Disappearance of the color of blue copper sulphate by putting a piece of magnesium.
Bec. (Mg) comes before (Cu) in C.A.S. so it replaces (Cu) forming colorless ($MgSO_4$) and red (Cu) p.p.t.
2. A blood is only way for the hormone to reach its site of action (target cells).
Bec. The target cells are located away from endocrine gland.
3. A continuous growth in the limb's bones of some persons so the person becomes a giant.
Due to increase of growth hormone at childhood.
4. Mendel selected the pea plant to conduct his experiments.
Bec. It is easy to planted – its life cycle is short – it produces large numbers of plants.
5. Pituitary gland is called the master gland.
Bec. It secretes hormones that regulate the activities of most of other endocrine glands.
6. Copper and gold does not react with diluted hydrochloric acid.
Bec. Copper and gold comes after hydrogen in C.A.S.
7. Genes control the appearance of hereditary traits of the individual.
Bec. Each gene gives a special enzyme which makes protein for specific trait.
8. Uranium element is considered from radioactive elements.
Bec. It produces radiation as its nucleus has neutrons more than required for stability.
9. The fridge is used to preserve food.
Bec. Coldness slow down speed of chemical reaction and bacteria
10. Learn to walk in children is not considered a genetic trait.
Bec. It's acquired trait can't be transmitted from a generation to another.
11. Not keeping silver nitrate solution in Aluminum can.
Bec. (Al) comes before (Ag) in C.A.S so it replaces silver lead to eroding of can.
12. Sliding rheostat is used in some electric circuits.
13. To controls current intensity and potential difference.
14. Some electric cells are connected in the electric circuits in series.
To obtain a battery with high e.m.f. .
15. The speed of chemical reaction increases by increasing the concentration of reactants.
16. Due to increase number of collision between reactants molecules.
17. It is preferable to use alternating electric current instead of direct electric current.
18. Bec. It can be transmitted for long distances and can be changed into a direct current.
19. The free ear lobe trait dominants the attached ear lobe trait.
20. Bec. The gene of free ear lobe dominant over the gene of attached ear lobe.
21. Nuclear radiation has genetic effects.
Bec. It changes in sex chromosomes composition cause abnormal birth.
22. Pancreas is a double function gland.
Bec. It secretes insulin hormone and glucagon hormone each one has opposite function to the other.

23.The rate of the chemical reaction increases by increasing temperature.
Due to increase number of collision between reactants molecules.
24.Sodium is from the reducing agents while chlorine is from the oxidizing agent.
25.Bec. (Na) atom loses electron while (Cl) atom gain electron in chemical reaction.
26.The ability to roll the tongue is one of the dominant traits in the human being.
Bec. The gene of ability to roll tongue dominant over the gene of inability to roll tongue.
27.Reactions between ionic compounds are fast than covalent compound.
Bec. Reaction of ionic compounds occurs between ions while covalent between molecules.
28.The rate of the reaction of hydrochloric acid with iron filings is faster than iron piece.
29.Bec. Speed of chemical reaction increase By increase surface area of reactants.
30.Some people suffer from simple goiter.
Due to the decrease in secretion of thyroxin hormone.
31.Alternating current is often preferred than the direct current.
Bec. It can be transmitted for long distances and can be changed into a direct current.
32.The variable resistance used in some electric circuits.
To controls current intensity and potential difference.
33.The voltmeter is connected across the two poles of a battery.
To measure the electromotive force of the battery.
34.Oxidation and reduction are concurrent processes.
35.Bec. Number of lost electrons in oxidation = number of gained electrons in reduction
36.Chemical reactions are very important to us.
Bec. They important for fuel burning, photosynthesis and medicines products.
37.A white precipitate is formed on adding silver nitrate solution to sodium chloride solution.
Due to formation of silver chloride which doesn't dissolve in water.
38.Mendel covers the stigmas of the pistils of pea flowers during studying the character of seed's color.
To prevent cross-pollination.
39.The two adrenal glands have important role.
Bec. They secrete adrenalin hormone activate body to respond to emergencies.
40.Burning steel in pure oxygen is faster than in atmospheric air.
Bec. Speed of chemical reaction increase By increase concentration of reactants.
41.The radioactive wastes should be buried away from underground water path.
To avoid water pollution.
42.When a yellow pod pea plant is pollinated with a green pod pea plant, they produce green pods.
Bec. Green pod trait dominant over yellow pod trait according to principle of complete dominance.
43.A red precipitate is formed when magnesium is added to copper sulphate solution.
Bec. (Mg) comes before (Cu) in C.A.S. so it replaces (Cu) forming colorless ($MgSO_4$) and red (Cu) p.p.t.

44.Crossing between dominant trait and recessive trait may give 1 : 1 ratio.

Bec. Dominant parent have hybrid trait.

45.Adding a piece of sweet potato in the decomposition of hydrogen peroxide.

Bec. Oxidase enzyme acts as catalyst increase decomposition of hydrogen peroxide.

46.Hormones are secreted in the body by some organs called endocrine glands (ductless gland).

Bec. They secrete their hormones directly to the blood.

47.In the reaction : $H_2 + CuO \rightarrow Cu + H_2O$ hydrogen is considered as a reducing agent, while copper oxide is considered as an oxidizing agent.

Bec. Hydrogen takes oxygen away while copper oxide gives oxygen.

48.In the reaction: $2Na + Cl_2 \rightarrow 2NaCl$ sodium is considered as a reducing agent, while chlorine is considered as an oxidizing agent.

Bec. (Na) atom loses electron while (Cl) atom gain electron in chemical reaction.

49. Oxidation and reduction are concurrent processes.

Bec. Number of lost electrons in oxidation = number of gained electrons in reduction

43. The areas chosen for storing radioactive wastes should be stable.

To prevent the spread of radiation to other areas.

44. Mendel is considered as the founder of hereditary.

Bec. He studied how hereditary traits transmitted from one generation to another.

45. Skin color is one of hereditary traits.

Bec. It can be transmitted from one generation to another.

46. Mendel removes the stamen of pea flowers during studying the character of seed's color.

To prevent self-pollination.

47. Some electric cells are connected in the electric circuits in parallel.

To obtain a battery with low e.m.f. .

Illustrate by balanced chemical equations the following reactions:

1. The effect of heat on red mercury oxide.
2. The effect of heat on blue copper hydroxide.
3. The thermal decomposition of copper carbonate.
4. The effect of heat on blue copper sulfate.
5. The effect of heat on sodium nitrate.
6. The reaction of water with sodium (what are the required precautions forthe reaction?).
7. The reaction of zinc with dilute hydrochloric acid.
8. Adding of aluminium turnings to dilute hydrochloric acid.
9. Insertion of a magnesium ribbon into a solution of copper sulfate.
10. The reaction of hydrochloric acid with sodium hydroxide
    (What is the name of the reaction?)
11. Adding calcium hydroxide solution to dilute hydrochloric acid.
12. The reaction of sodium carbonate with dilute hydrochloric acid.

13.Adding silver nitrate solution to sodium chloride solution.

14.Reduction of hot copper oxide by passing hydrogen gas.

15.A reaction in which an atom of element acquires one electron or more.

16.A reaction in which an atom of element loses one electron or more.

What happens when?

1. Putting a piece of magnesium in copper sulphate solution.
Color of copper sulphate disappears and red copper p.p.t. is formed.

2. Exposing a man for large dose of nuclear radiation for a short period of time.
It damage of bone marrow, digestive and nervous system.

3. Ammeter and voltmeter reading in a circuit if the resistance is burnt.
Ammeter reading = 0, voltmeter reading = e.m.f. of battery.

4. Heating red mercuric oxide.
A silvery p.p.t. of mercury is formed and oxygen gas evolves.

5. The amount of growth hormone decreased in the childhood.
The person becomes dwarf.

6. Change the chemical composition of the hemoglobin of the blood.
It will be unable to carry oxygen to the cells.

7. Pitting a piece of sweet potato in a flask has hydrogen peroxide.
The speed of chemical reaction increases.
8. Mendel leave the stigmas of pea plant without covering.
Cross pollination will occur.

9. Adding a piece of sodium to water.
It forms sodium hydroxide and hydrogen gas evolves with pop sound.

10. Adding silver nitrate solution to sodium chloride solution.
A white p.p.t. of silver chloride is formed.

11. Two charged conductors connected one of them has high electric potential .
Electric current flow from high to low potential conductor.

12. Pancreas stopped secreting glucagon hormone.

The level of glucose sugar in blood decreases.
13. Replacing a piece of iron with iron filings in a reaction with diluted acid.
The speed of chemical reaction increases.

14. Increase of potential difference at constant resistance.
   Electric current intensity increases.
15. Heating green copper carbonate.
   A black substance of copper oxide is formed and CO_2 gas evolves.
16. Exposing a man for small dose of nuclear radiation for a long time.
   It causes physical, genetics and cellular effects on human.
17. Increase in the concentration of the reactants.
   The speed of chemical reaction increases.
18. When the radiation affect s on cellular effects of the body.
   They change cell composition cause destroy cells.
19. When the individual carries a recessive gene from both parents.
   The recessive trait appears.
20. Mating between two pure individuals in different pair of contrasting traits.
   They produce generation carries hybrid dominant trait only.
21. Adding hydrochloric acid to sodium carbonate salt.
   It produces sodium chloride, water and CO_2 gas turbid lime water.
22. Increase the resistance (wire length) in the rheostat (variable resistance).
   Electric current intensity and potential difference decreases.
23. Adding manganese dioxide to hydrogen peroxide.
   The speed of chemical reaction increase.
24. Increasing surface area of the reactants.
   The speed of chemical reaction increase.
25. Iodine and thyroxin hormone decrease in the food of the man.
   It causes simple goiter for man.
26. The atom has number of neutrons more than number for stability.
   It emits radiation to reach a more stable composition.
27. Cross-pollination between two pure pea plant one yellow pod and the other with green pod.
   All the produced pea plants are hybrid green pods.
28. When the radiation affects on genetic effects of the body.
   They change sex chromosomes composition cause abnormal birth.

<u>Mention ONE use – importance - of each of the following :</u>

1- The alternating electric current. (lighting houses –electric appliances)

2- The direct electric current. (electroplating – some electric appliances)

3- Nuclear energy in the agricultural field. (eliminate pests – improve plant races)

4- Adrenal gland. (secrete adrenalin hormone to respond body to emergencies)

5- Variable resistance (the sliding rheostat).
(control current intensity and potential difference)

6- Oxidase enzyme in sweet potato. (speed up decomposition of Hydrogen peroxide)

7- Nuclear energy in the industrial field.(convert sand to silicon sheets used in computer)

8- Radioactive elements – nuclear energy- in the medical field.
(to treat diseases like cancer)

9- Putting manganese dioxide in some chemical reaction.
(as catalyst speed up decomposition of H_2O_2)

10- The genetically modified rice. (provide body with vitamin A to keep the sight)

11- Electrochemical cells. (used to obtain direct current)

12- Calcitonin hormone. (control level of calcium in blood)

13- Progesterone hormone. (promotes growth of endometrium)

14- Insulin hormone. (decrease level of glucose sugar in blood)

15- Enzymes. (act as a catalyst speed up chemical reaction)

16- Thyroxin hormone. (liberates energy from food assimilation)

17- Catalysts. (change the rate – speed of chemical reaction)

18- Ammeter. (measure electric current intensity)

19- Voltmeter. (measure potential difference and e.m.f.)

20- Ohmmeter. (measure electric resistance)

21- Connection of dry cells in series. (to obtain high e.m.f. for battery)

22- Connection of dry cells in parallel. (to obtain low e.m.f. for battery)

23- Nuclear energy in the electricity generation field.
(to heat water to produce steam to operate turbines to generate electricity)

24- Nuclear energy in the space exploration field. (used as nuclear fuel for rockets)

25- Nuclear energy in the drilling field.
(for drilling of petroleum and underground water)

26- Genes. (control appearance of hereditary traits)

Compare between each of the following :

1- Metal oxide and metal hydroxide (according to thermal decomposition).

Metal oxide	metal hydroxide
Gives metal and oxygen gas	Gives metal oxide and water vapor

2- Hereditary traits and acquired traits (according to : Def. - example).

Hereditary traits	Acquired traits
Traits are transmitted from one generation to another	Traits are not transmitted from one generation to another
Hair color	Swimming

3- Oxidizing agent and reducing agent (according to gaining or losing electrons).

Oxidizing agent	Reducing agent
Substance gains electron or more in chemical reaction	Substance loses electron or more in chemical reaction

4- Oxidation and reduction process.

Oxidation	Reduction
Chemical process which atom loses electron or more	Chemical process which atom gains electron or more

5- Covalent and ionic compounds (according to the speed of chemical reaction).

Covalent compound	Ionic compound
Slow reaction	Fast reaction

6- Direct and alternating current (in intensity and direction).

Direct current	Alternating current
Constant intensity and direction	Variable intensity and direction

7- Ammeter and voltmeter (according to method of connection).

Ammeter	Voltmeter
Series connection	Parallel connection

8- The wide eyes trait and the narrow eyes trait (according to type of each trait).

Wide eyes	Narrow eyes
Dominant trait	Recessive trait

9- Direct and alternating current (in view of the field using).

Direct current	Alternating current
Electroplating process	Lighting house

10- Gigantism and dwarfism (according to the reason).

Gigantism	Dwarfism
Increase in growth hormone	Decrease in growth hormone

11- Direct and alternating current (according to source of each).

Direct current	Alternating current
Electrochemical cell	dynamo

12- Testes and ovaries glands (according to the secreted hormone).

Testes	Ovaries
Testosterone hormone	Estrogen – progesterone hormones

13- Natural and artificial resources of nuclear radiation pollution (example of each).

Natural pollution	Artificial pollution
Cosmic radiation	Nuclear wastes

14- The importance of testosterone and progesterone hormones.

Testosterone	Progesterone
Appears male sex characters	Appear female sex characters

15- The dominant trait and recessive trait (according to definition).

Dominant trait	Recessive trait
Trait appears if two similar factors for dominant trait or hybrid	Trait appears only if two similar factors for recessive trait.

16- Unit of measuring current intensity and potential difference(according to definition)

Current intensity	Pot. Difference
Ampere	Volt

17- Genetic and cellular effects of nuclear radiation.

Genetic effect	Cellular effect
Change in sex chromosomes composition	Change in cell composition

18- Simple and exophthalmic goiter (according to reason of each).

Simple goiter	Exophthalmic goiter
Decrease in thyroxin hormone	Increase in thyroxin hormone

19- Thyroxin and Calcitonin hormones (according to their function)

Thyroxin hormone	Calcitonin hormone
Liberates energy from food assimilation	Control level of calcium in blood

What is the meant by – Define each of the following :

1- **The principle of complete dominance.** **(appearance of dominant trait in first generation when two individuals crossed carrying pure traits)**

2- **The potential difference.** **(value of work done to transfer a quantity of charge (1 coulomb) between the two poles of this conductor)**

3- **Genes.** **(part of (DNA), responsible for appearance of hereditary traits).**

4- **Hormones.** (**chemical substance that control and regulate vital activities)**

5- **The ampere. (It's the current intensity of conductor whose resistance one ohm and potential difference one volt)**

6- **The volt. (It's the potential difference of conductor whose resistance one ohm and current intensity one ampere).**

7- **The ohm. (It's resistance of conductor whose current intensity one ampere and potential difference one volt).**

8- **The catalyst. (a substance change rate of chemical reaction without change)**

9- **Mendel's second law. (**If two individuals are different in two pairs crossed, traits inherited independently and appears in second generation at ratio of (3:1)

10- **Mendel's first law.** If two pure individuals of one pair in different traits crossed only dominant trait appears in first generation and two traits appear in second generation at ratio (3:1)

11- **Electric potential of conductor. (state of conductor shows transfer of electricity from or to it).**

12- **Chemical reaction. (is breaking of bond in reactants and formation of new bonds in products)**

13- **The chemical activity series. (Arrangement of metals in descending order according to chemical activity).**

14- **Nuclear binding force.** (**force that binds the nucleus components together)**

15- **The human genome.** (**genetic map shows the complete set of genes on human)**

16- **Neutralization reaction.** reaction between acid and alkali to form salt and water

17- **Radioactivity.** (decay of nuclei of radioactive elements to become more stable)

18- **The electric resistance.** opposition that electric current faces in a conductor

19-**Electric current intensity**. quantity of electric charges flow in a conductor in one second

20- **Ohm's law.** The electric current intensity is directly proportional to potential difference at constant temp.

21- **Electromotive force.** potential difference between two poles of battery when circuit is open

22-**Radioactive elements**. elements nuclei have number of neutrons more than number for stability

23-**Isotopes**. atoms of same element with same number of protons and different number of neutrons

24-**Thermal decomposition reaction**. It is a reaction which compound is broken up into simple components by heat.

25- ***Double substitution reaction:*** reaction where double exchange between ions of two compounds occurs.

Solve the following problems:

1- Calculate the current intensity that flow through a wire if the electric charge equals 20 coulombs in a time 4 seconds.

$I = q \div t = 20 \div 4 = 5$ ampere

2- Calculate the current intensity that flow through a wire if the electric charge equals 180 coulombs through 2 minutes.

$t = 2x60 = 120$ sec. $I = q \div t = 180 \div 120 = 1.5$ ampere

3- Calculate the amount of charges that flow through a wire if the electric intensity equals 6 amperes through 2 seconds.

$q = I \times t = 6 \times 2 = 12$ coulomb

4- Calculate the amount of charges that flow through a wire if the electric intensity equals 10 amperes through 1 minute.

$t = 1x60 = 60$ sec. $q = I \times t = 10 \times 60 = 600$ coulomb

5- If an electric heater connected to a source of electric current its intensity =2 ampere. Calculate the amount of charges that flow through a wire in 4.2 seconds.

$q = I \times t = 2 \times 4.2 = 8.4$ coulomb

7- Calculate the time of transferring of electric charges = 10 coulombs in an electric circuit if the current intensity = 5 amperes.

$t = q \div I = 10 \div 5 = 2$ sec.

8- Calculate the time of transferring of electric charges = 60 coulombs in an electric circuit if the current intensity = 0.25 amperes.

$t = q \div I = 60 \div 0.25 = 240$ sec.

9- Calculate the potential difference between two terminals of the wire when the work done to transfer electric charge is 8 coulomb = 32 joules.

$V = w \div q = 32 \div 8 = 4$ volt.

10- Calculate the work done to transfer electric charge is 50 coulomb if the potential difference between two terminals of the wire = 12 volts.

$w = V \times q = 12 \times 50 = 600$ joule.

12- Calculate the work done by a battery its e.m.f = 12 volts to transfer an electric charge of 2.5 coulomb in an electric circuit.

$w = V \times q = 12 \times 2.5 = 30$ joule.

13- Calculate the potential difference between two points when the work done = 12 joule to transfer an electric charges = 3 coulombs and if time for this = 0.5 minute what is the current intensity?

V = w ÷ q = 12 ÷ 3 = 4 volt.

t = 0.5 x 60 = 30 sec.   I = q ÷ t = 3 ÷ 30 = 0.1 ampere

14- If the potential difference between the two poles of a phone = 24 volts, what is the electric resistance of the phone wires if the current intensity is 0.03 ampere.

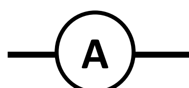
R = V ÷ I = 24 ÷ 0.03 = 800 ohm

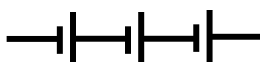
15- An electric appliance works with a potential difference 220 volts and electric resistance 20 Ohm. Calculate the current intensity and the amount of electric charges through 5 seconds.

I = V ÷ R = 220 ÷ 20 = 11 ampere

q = I x t = 11 x 5 = 55 coulomb

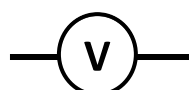
Write the name of each of the following symbols. And write the use of each one.

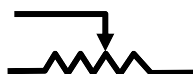






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1- Ammeter   2- battery   3- open key

4- voltmeter   5- variable resistance (Rheostat)   6- fixed resistance

Complete:

1- Organs which secrete hormones are called endocrine gland

2- When sodium reacts with water hydrogen gas rises.

3-The change in the concentration of reactants and resultants in a time unit is speed of chemical reaction

4- neutralization process is the reaction between an acid and alkali to form salt and water.

5-The Scientist Mendel is the founder of heredity,

6-The ability to roll the tongue is from the dominant traits, while the straight hair is from recessive traits.

7-Nuclear energy is used in medicine to treat cancer

8-When the amount of iodine decreases in food, the secretion of thyroxin hormone decreases

9-The measuring unit of electric charges is coulomb

10-The reducing agent is the substance which loses one electron or more during chemical reaction.

11-Electric cells produce direct current, while the dynamo produces alternating current.

12-During thermal decomposition reactions the compound breaks up by heat into its simple components.

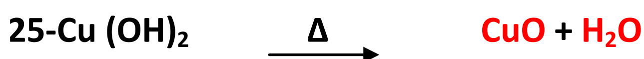
13-The current intensity is measured by Ammeter and electromotive force measured by Voltmeter

14-Pancreas secretes a hormone called insulin which reduces the level of sugar in the blood

15-Te iodine element shares in composing thyroxin hormone.

16-The ammeter is connected in the electric circuit in series while the voltammeter is connected in parallel

17-The chromosome is chemically consisted of DNA combined with protein

25-$Cu(OH)_2$  $\xrightarrow{\Delta}$ $CuO + H_2O$

26-$2N_2O_5$  $\longrightarrow$ $4NO_2 + O_2$

Put (√) or (×) and correct the wrong ones:

1-Iron enters in the structure of thyroxin hormone. x iodine

2-Volt is the measuring unit of the electrical resistance. X ohm

3-Dwarfism is a disease caused by decreasing of calcitonin hormone of the human body. X growth

4-Genes are parts of DNA found in the cytoplasm of the cell. X nucleas

5-Blood groups is considered as acquired traits. X hereditary

6-Mendel made a model of DNA structure. X Watson and Crick

7-The blood sugar increases if the pancreas stops secreting insulin hormone. √

8-If the potential difference between the two ends of a conductor =110 volt and the current intensity passing through the conductor is 0.1 ampere, the resistance of this conductor =1100 ohm. √

9-The measuring unit of electric resistance is coulomb. X ohm

10-Most metal carbonates decompose on being heated into non-metals and carbon dioxide gas. X metal oxide

11-Increase of secretion in parathormone hormone causes exophthalmic goiter disease . x thyroxin

12-The reaction between an acid and an alkali forming salt and water is called neutralization reaction. √

13-The arrangement of the metals in a descending order according to the rate of its chemical activity is called periodic table. X chemical activity series

14-The estrogen hormone releases the needed energy from the food. X thyroxin

15-Hydrochloric acid reacts with sodium carbonate and a gas which turbid limewater is rising . √

16-Nuclear reactions which are done in nuclear reactors can't be controlled x can

17-In the electric cell, the magnetic energy is converted into electric energy. X chemical

18-The scientist Watson and Creek discovered the means of how the gene controls the appearance of a trait. X Badel and Tatum

19-The movement of charges between two conductors depends on the difference in potential. √

20-If two individuals bearing a pair or more of alternative traits are crossed, the trait of each pair is inherited independently of the others and appearance in the second generation at a ratio of 6:3. X 3:1

21-The mathematical relation of Ohm's law is R=V/I √

المراجعة رقم (3)

الترم الثانى





Final Revision (prep 3)

(1)Choose the correct answer :

1. Which of the following substances doesn't give black products by heating it, …………

a. HgO b. $Cu(OH)_2$ c. $CuSO_4$ d. $CuCO_3$

2. In the reaction : Hydrogen + copper oxide → copper + water, …………… acts as oxidizing agent.

a. copper oxide b. hydrogen c. copper d. water

3. If an electric current of 0.01 ampere passes through a conductor for half hour, so the amount of electricity which passes through this conductor equals …………… coulomb.

a.3 b.5 c. 18 d. 200

4. In dynamo the …………… energy is converted into electric energy.

a. magnetic b. kinetic c. chemical d. light

5. the …………….. is the measuring unit of the electric charges.

a, coulomb b, ampere c. volt d. none of them

6. The radioactive phenomenon was discovered by the scientist……………

a, Ohm. b. Becquerel. c. Ampere. d. none of them

7. There is a small gland in the size of a pea seed which is called ……………… gland

a, pituitary b. thyroid c, adrenal d. none of them

8. ……………….. hormone stimulates the storage of glucose sugar in liver.

a, Calcitonin b, Glucagon c. Insulin d. all of them

9. Parts of DNA present in the nucleus of the cell are called ……………

a. gametes. b. genes. c. cytoplasm. d. protein

10. At the beginning of the reaction, the percentage of the reactants concentration equal ……………..

a. zero b. 50 % c. 75 % d. 100 %

11. Clear limewater turbid when ………………… gas pass through it.

a, SO_3 b. H_2 c. CO_2 d. O_2

12. Arrangement of metallic elements in a descending order according to the degree of their chemical activity is called ……………………

a. positive ions. b. negative ions.

c. chemical activity series. d. neutral atom.

13. Which one of these traits is recessive in humans ? ……………………..

a. Presence of dimples. b. Narrow eyes.

c. Wide eyes. d. Curly hair.

14.One of the properties of the direct current is…………………..

a. constant value only. b. change direction only

c. change direction and value. d. constant direction and value.

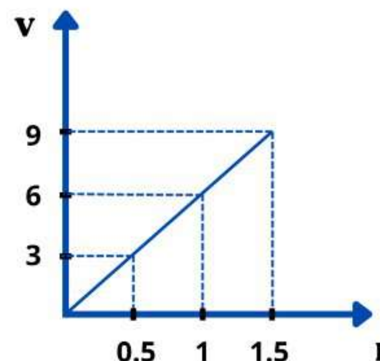
15. According to Mendel's first law. the hereditary factors…………… when gametes are formed

a. double b. fuse c. segregate d. disappear

16. from the opposite graph, the resistance of the conductor equal…………. ohm.

a. 1.5 b.4

c.6 d. 18



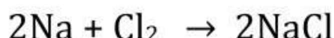
17. Genes control the organism's genetic characteristics by producing……………

a. hormones. b. enzymes. c. fat d. vitamins.

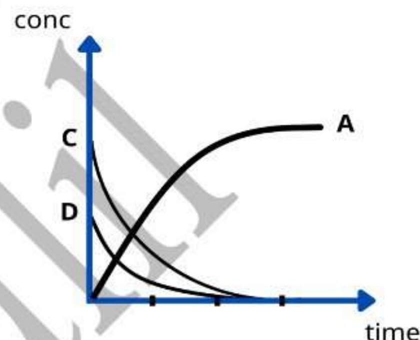
18. The apparatus used to control the value of electric current intensity in the circuit is the …………………

a. ammeter. b. voltmeter. c. ohmmeter. d. rheostat.

19. The opposite graph represents the following reaction :



$$2Na + Cl_2 \rightarrow 2NaCl$$



So the compound " NaCl " represented by .... curve(s).

a. A b. C c. D d. C ,D

20. The radioactive phenomenon was discovered by the scientist ....

a.Gregor Mendel. b.Henry Becquerel. c.Ohm. d. Fred Hoyle.

21. When sodium chloride solution reacts with silver nitrate .... precipitate is formed.

a. red b. white c. reddish brown d. blue

22. When electric current passes through across section of a conductor and current intensity 2 ampere in (10) seconds, 86 quantity of electricity passes equals .... coulomb.

a.5 b.10 c.20 d. 30

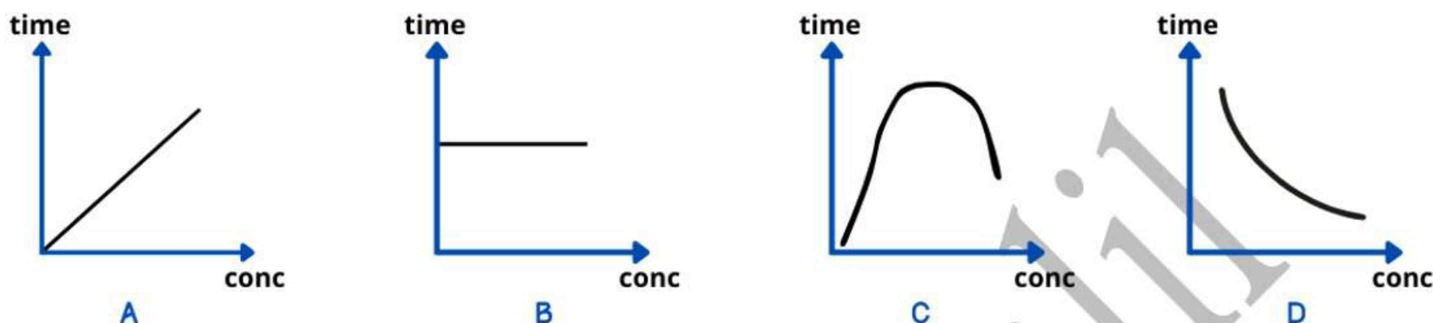
23. From the uses of nuclear energy in the .... field is to improve of some plant races.

a. medical b. drilling c, industrial d. agricultural

24. .... is considered the responsible for carrying oxygen to all body cells.

a, Bone marrow b. Blood hemoglobin c, Chromosomes d. All the previous

25. On reacting magnesium strip with dilute hydrochloric acid the figure…………. expresses the change in the concentration of the hydrochloric passing time.



26. When sudden and fast decrease in the speed of the car this leads to the decomposition of sodium azid and…………………… gas evolved

a.N_2 b.H_2 c,O_2 d. CO_2

27. On adding copper turning to diluted hydrochloric acid……….

a. hydrogen gas evolves.

b. copper chloride solution forms.

d. copper oxide forms.

c. no reaction occurs.

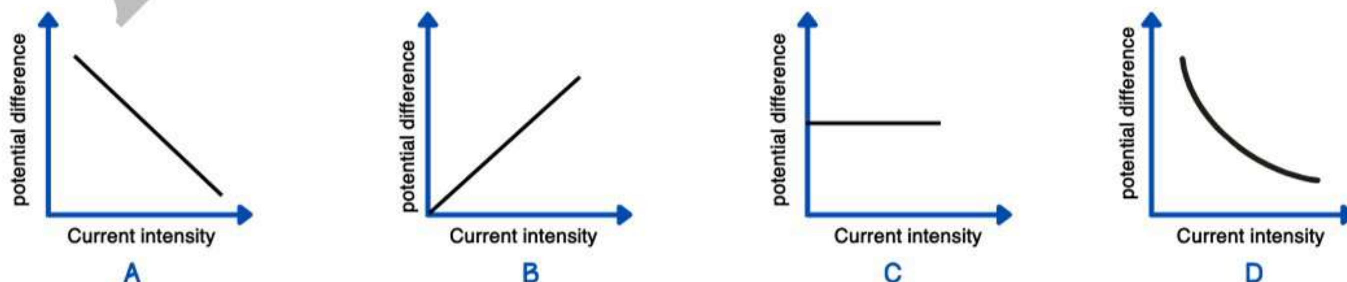
28. The increase in the concentration of the reactants during chemical reaction, the …………………..in the number of collisions between molecules.

a. increase b. no change c. decrease then increase d. decrease

29. People who work in radiation field should not be exposed to the nuclear radiation in amounts more than ………………. mili-Sievert.

a.5 b.8 c.20 d. 10

30. Which of the following diagram expresses Ohm's law ?



31. In adding silver nitrate solution to sodium chloride solution …………… Precipitation is formed from silver chloride.

a. red　　b. blue　　c. black　　d. white

32. The charge transferred by a constant current of intensity one ampere in one second is……………..

a. ohm.　　b. coulomb.　　c. volt.　　d. ampere.

33. The active metals can replace the hydrogen of water forming ………………. and hydrogen gas evolves.

a. metal hydroxide　　b. metal oxide　　c. metal carbonate　　d. metal sulphate

34. The unit of measuring absorbed radiation is …………..

a. joule.　　b. coulomb.　　c. Sievert .　　d. newton.

35. The product of multiplying current intensity by the time needed to flow that current, produces a physical quantity which is measured by a unit called…………..

a. ampere.　　b. coulomb.　　c. ohm.　　d. volt.

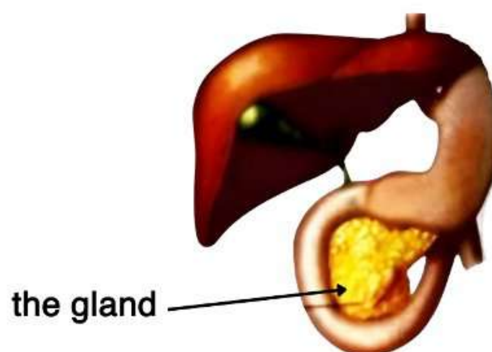
36. The gland illustrated in the figure in front of you, secretes two hormones which are……………….

a. thyroxin and calcitonin,

b. thyroxin and adrenalin.

c. insulin and glucagon,

d. estrogen and Progesterone.



37. If crossing takes place between a male and female the genetic composition for each of them is (Bb), So the ratio between the resulting offspring which carry the genetic composition (BB) to the total number of offspring is………………..

a. ½　　b. ¾　　c. 1/1　　d. ¼

38.When two pea plants were crossed, both were tall-stemmed and the resulting offspring was $\frac{3}{4}$ percent of tall-stemmed Plants and $\frac{1}{4}$ Percent of short stemmed plants, then the genotype of the two crossed plants was ………………………

1. Tt x Tt b. tt x Tt c. Tt x TT d. tt x tt

39. Active metals substitute hydrogen of water to Produce …………… and hydrogen gas evolves.

a. metal hydroxide b. metal oxide c. metal carbonate d. metal sulphate

40.In decomposition reactions, the compound decomposes into………..

a. simple components. b. primary elements.

c. other compounds . d. all the previous.

41, Scientists have found that the …………… are DNA parts present on the chromosomes.

a. gametes b. genes c. cytoplasm d. no right answer

42. ………………. glands secrete chemical substances are called hormones.

a. Endocrine b. External c. Lymphatic d. Sweat

43. From examples of simple substitution reaction is……………….

a. reaction between an acid with an alkali.

b. reaction between an acid with salt.

c. reaction between metal with salt solution.

d. reaction between salt solution with another salt solution.

44. The two scientists…………discovered the role of gene in the appearance of hereditary traits.

a. Watson and Creek b. Badel and Tatum

c. Henri and Einstein d. Ohm and Mendel

45. Which of the following formula represent the right relation between quantity of charges, electric current intensity and the time?

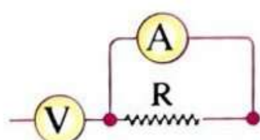
a. Current intensity = quantity of charge / time

b. Quantity of charge = time / current intensity

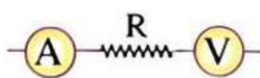
c. Quantity of charge = current intensity / time

d. Current intensity = quantity of charge x time

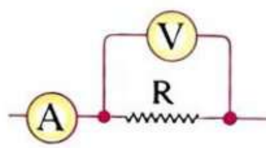
46. Which of the following figures represents the right connection of the ammeter and voltmeter in a circuit ?



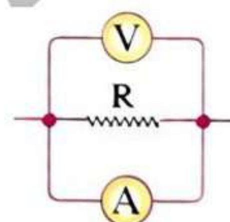
A



B



C



D

47. Mendel removes ……………. from the plant's flowers to prevent the self-pollination.

a. stamens b. anther c. petals d. pituitary

48. ………….gland secretes hormones that regulate the growth of the body as a whole.

a. Pancreas b. Thyroid c. Adrenal d. Pituitary

49. To generate an alternating electric current, we use the…………….

a. dry cell. b. ohmmeter. c. voltmeter. d. dynamo.

50. Some traits are not transmitted from one generation to another such as………………..

a. hereditary traits. b. acquired traits.

c. recessive traits. d. dominant traits.

51. Zinc element is more active than……………element.

a. potassium b. hydrogen c. sodium d. magnesium

52. The hormone that stimulates the storage of glucose sugar in liver is……………..

a. thyroxine. b. adrenalin. c. insulin. d. glucagon.

53. At the ending of any chemical reaction, the concentration of reactants is

a. 50 % b. zero c. 75 % d. 100 %

54. The reaction between silver nitrate solution with sodium chloride solution is …………… reaction.

a. fast b. average c. slow d. very slow

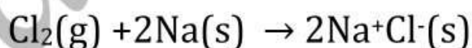
55. Which one of these traits is recessive in human?.

a. Curly hair. b. Wide eyes. c. Free ear lobe. d. Straight hair.

56. According to the Mendel's second law, the hereditary traits are inherited................

a. independently. b. dependently. c. connected. d. collectively.

57. In the following reaction between sodium and chlorine:



$$Cl_2(g) + 2Na(s) \rightarrow 2Na^+Cl^-(s)$$

What is substance which is reduced in this reaction?

a. Sodium ions. b. Chlorine atoms.

c. Sodium atoms. d. Chloride ions.

58. By adding............the speed of breaking up of hydrogen peroxide increases.

a. manganese oxide b. manganese dioxide

c. magnesium oxide d. chromium dioxide

59. ………………from the effects of hereditary traits due to exposing a human to a small dosage of radiation for a long time.

a. Destroy the central nervous system

b. Destroy the spleen

c. Changes in the sex chromosomes composition

d. Changes in the hemoglobin composition

60. The hereditary substance which found in the cells has great information which control the traits, this hereditary substance is called………………..

a. PNA b. NAD c. RNA d. DNA

61. The volt is equivalent…………….

a. coulomb / ampere. b. ampere x second.

c. joule/coulomb. d. coulomb/second.

62. Catalytic convertor consists of ceramic cells covered with a thin layer of a catalytic metal as…………

a. calcium. b. palladium. c. radium. d. silicon.

63. The individual who carries a different pair of genes for a hereditary trait …………….individual.

a, pure b, recessive c. hybrid d, dominant

64. To control the value of electric resistance in an electric circuit we use……………

a. ammeter b. voltmeter c . ohmmeter d. rheostat

65. When a current of 2 ampere pass through a conductor and the potential difference between its terminals is 220 volt, so the conductor resistance = …….. ohm.

a. 1100 b. 100 c. 110 d. 10

66. The chemical formula of nitrogen pentoxide is ………….

a. NO_2 b. N_2O_5 c. $5NO_2$ d. N_2O_5

67.From the peaceful uses of nuclear energy, the searching for petroleum and underground water in …………. field

a. agricultural b. drilling c. industrial d. medical

68. from a compounds which decompose by heat into metal and oxygen is …………….

a. HgO b. $CuCO_3$ c. $CuSO_4$ d. $Cu(OH)_2$

69. The genetic structure of smooth green colored seeds of a pea plant is…………….

a. YYSS b. yyss c. YYss d. yySS

70. enzymes act as ……………. in most of biological process. .

a. oxidizing agent b. detergent agent c. catalysts d. reducing agent

71. Malnutrition produce as a result of deficiency of vitamin (A) in the body may lead to …………………

a. cancer disease. b. losing the sight. c. pollo d. deafens.

72. On adding hydrochloric acid to a piece of silver ………….

a. silver chloride is formed. b. silver hydroxide is formed.

c. silver oxide is formed. d. no reaction occurs.

73. The hereditary factors……………. When the gamets are formed, that as Mendel's first law.

a. duplicate b. disappear c. segregate d. merge

74. Aluminum practically lates in its reaction with hydrochloric acid due to the presence of ……………… layer.

a. aluminum chloride b. aluminum oxide

c. aluminum hydroxide d. aluminum sulphate

75. When magnesium replaces Copper in its salt solution , then a ………… Precipitate is formed.

a. black b. white c. red d. blue

76. The ratio between the potential difference across two ends of a conductor and the current intensity that passes through it is known as……………..

a. the electromotive force.
b. the quantity of electricity,
c. the electric resistance.
d. the electric Current

77 . This reaction $Cl_2 + 2e^- \rightarrow 2Cl^-$ expresses a……………..process

a. decomposition b. oxidation c. reduction d. substitution

78. If the current flowing through an electrical resistance of 10 ohm is doubled, then the value of the resistance is………………. ohm at a given temperature.

a.5 b.10 c.20 d.40

79. When nitrogen pentoxide gas is decomposed, …………. gas is evolved

a. nitrogen b. carbon dioxide c. hydrogen d. oxygen

80. Genes control the appearance of an Organism by production of ………………

a. hormones, b chromosomes . c. enzymes d. oxygen

81. Electromotive force and potential difference have same measuring unit is………

a. ohm/ampere.
b. ampere/ohm.
c. coulomb/joule.
d. joule/ampere. Second

82. the …………… current can be graphically represented by straight line parallel to the time

a. alternating
b. direct
c. all the previous
d. no correct answer

83. The mathematical relation of Ohm's law is ....

a. $R=\frac{V}{I}$ b. R=VI c. R=V-I d. R=V + I

84. According to Mendel's second law, in the second generation the ratio between number of plants carry dominant traits to number of plants carry recessive traits is………………

a. 1: 1 b. 1:2 c. 12 : 4 d. 1 : 4

85. The value of the resistance of a conductor in an electric circuit, is changed on changing ....

a, conductor dimensions.

b. electric current intensity passing through it.

c. quantity of electric charges passing through it.

d. time of connection.

86. The recessive trait appears in an individual if he inherited from the parents ....

a, two dominant genes.

b, one dominant gene and the other is recessive gene.

c, two recessive genes.

d. only one dominant gene.

87. In the electric generators, ... energy is converted into electric energy.

a, magnetic b. kinetic c. chemical d. light

88. According to first Mendel law the hereditary traits …..................

a. duplicate. b. segregate. c, disappear. d. shrink

89. Mendel's second law is known as the law of …………………

a, independent assortment of factors.

b. segregations factors

c, merging of factors,

d, disappearance of factors.

---

(2) Complete the following sentences :

1. Covalent compounds have slow reactions because they take place between……….

2. Nitrogen pentoxide breaks up into nitrogen dioxide gas and .... gas.

3. The measuring unit of absorbed radiation by the human body is the……………..

4. Reaction of acid and alkali is known as .... reaction.

5. ……………. is considered as energy store.

6. From examples of natural radioactive elements is ....

7. Ceramic (metallic) cells are connected to the tube of the emitted gases from the engine present in modern cars is called……………

8. $AgNO_3 + NaCl \rightarrow$ ……….. + …………

9. Iodine element exists in the structure of…………. hormone

10. Pancreas secrets ……………. hormone when glucose level is increased in blood.

11. $Zn + 2HCl \rightarrow$ ……………. + ………………

12. The chromosome is chemically consisted of a nucleic acid called DNA binds with……………

13. Transmission of electric charges depends on the.................. between two conductors.

14. The attached ear lobe is one of the………..traits in the human.

15. Henri Becquerel discovered the emission of an unseen rays from………. Element

16. Basics of manufacture the atomic bomb were based on the theories of the scientist…………….

17. ………….. are considered as parts of the nucleic acid DNA, and they are responsible for appearing the individual's hereditary traits.

18. In human, some traits are not transmitted from one generation to another and they are called the .... traits.

19. The electromotive force of several similar cells connected in .... is equal to the e.m.f. of one cell.

20. the …………….. gland secretes hormone that regulate the growth and development of sex organs in human.

21. Ionic compounds reactions are .... than that of the covalent compounds.

22. The current produced from electrochemical cells is the…………..current.

23. When the amount of iodine decreases in food the secretion of the…………..hormone

24. The double substitution reactions between salt solutions are accompanied by the formation of………………

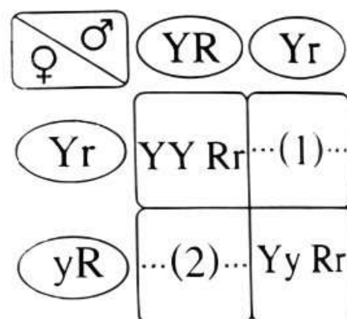
25. The colour of copper carbonate changes from green to…………….when heated.

26. The ………..apparatus is used to measure the electric current intensity in a unit known as ………….

27. ……………..produce direct current while electric generators produce……………current.

28. The trait that appears in the first generation of Mendel's law is………… while the trait that disappears in first generation is..................... trait,

29. Complete the diagram………………. , ………………….



30. The potential difference between the two terminals of a conductor is………………… proportional to the electric current intensity passing through it at a constant temperature

31. The ………………… effects of radiation is a result of changing the composition of the sex chromosomes of the cells.

32. $2HgO \rightarrow 2Hg +$ …………..

33. Mendel covered the stigmas of flowers to prevent………….. pollination

34. The radiologist should not be exposed to radiation amount more than……….. millisievert per year.

35. According to Mendel's first law, the two hereditary factors ....when the gametes are formed.

36. the …………… apparatus is used to measure the electromotive force.

37. the …………..traits are not transmitted from one generation to another.

38. In the electric cell ……………..energy is converted into electric energy.

39. the …………….. is chemically consists of a nucleic acid (DNA) combined with protein

40. The catalyst change the speed of reaction, but don't affect either………… or …………..

41. The voltmeter apparatus connected in parallel with a battery to measure .... in the open electric circuit, while it measure.................... in the close one

42. …………….. With …………….. for organizing body activates.

43. During Mendel's experiments, he removed the stamens fort the flowers before they become mature to prevent .... and he covered stigmas flowers to prevent ………………..

44. Learning of swimming in human is one of the ………………

45. From the cellular effects of radiation occurrence of changes in composition of…………… like the chemical change in………………..

46. The traits which are not transmitted from one generation to another are…………..traits. while blood groups from..............traits

47. The position of flowers in pea plant is…………or…………..

48. Nuclear energy can be used in industrial field to Convert sand into……………..

49. The unit that is used in measuring work is…………………..

50. The Mendelian hereditary trait in living Organism is controlled by one Pair of………………

51. The traits that are not transmitted from one generation to another are called ……………..

52. The change in the concentration of the reactants and the products in the unit time is known as ....

53. Oxidation and reduction are two .... processes

54. The dominant trait is the .... hair in human.

55. The function of……………… hormone is opposite to that of insulin hormone which are secreted by the pancreas.

56. Feeling very thirsty and multiple urination times is description of .... disease, and the reason is the decreasing in the secretion of the……………..hormone.

57. When the amount of iodine in the human diet decreases, secretion of the ………….. hormone decreases and lead to infection with…………….

58. The chemical process in which the atom loses an electron or more, is known as …………………..

59. The electric current that is produced from an electric generator is preferred than that is produced from………………..

60. The substance that decreases the energy needed for a reaction, is known as ……….

61. in the ……………. field the nuclear energy is used to convert sand into silicon.

62. Ammeter connected in an electric circuit in …………….. connection.

63. ………………can be transmitted from one generation to another.

64. Every hereditary trait is controlled by two hereditary factors which separate during formation of the………………

65. When pollinated a yellow seed pea plant with a green seed pea plant , they produce plants that are all with .... seeds in the first generation.

66. At the beginning of the chemical reaction, the concentration of reactants is……………

67. From the factors that affect the speed of the chemical reaction are ……………… and ……………..

68. The sliding rheostat used to .... in the electric circuit.

69. On pollination pea plant tall stem and red flowers (TTRR) with a pea plant short stem and white flowers (ttrr), so the genotype (TTRR)may be produced in their offspring at a percentage of ………………..

70. When magnesium substitutes copper in a solution of its salts , ………….. precipitate is formed

71. Each gene gives a special .... which is responsible for the occurrence of a chemical reaction.

72. the ………………. effect of radiation is a result of changing the sex chromosomes of the cells.

73. The rate of decomposing hydrogen peroxide increases by adding …………. or a piece of……………..

74. The ability to roll the tongue is from the .... genetic traits in the human.

75. The only way for the hormone to reach their sites of action is………………..

76. When we connect three similar cells, the electromotive force of each one 1.5 volt in a series connection, then the electromotive force of the battery produced is equal …………... Volt.

(3) Put (√) or (x) :

1. The current intensity produced due to the flow of an amount of electricity 5400 coulomb in 5 minutes is 18 ampere. (   )

2. Endocrine glands secrete more than 500 hormones in the human body. (   )

3. Growth hormone is secreted by the testicles. (   )

4. Gigantism is a continuous growth in limbs bones in Childhood. (   )

5. The e.m.f. of three similar cells are connected in Parallel is equal to e.m.f of one cell. (   )

6. Adrenalin hormone stimulate body's organs to respond to emergencies. (   )

7. The ohmmeter is used to measure the potential difference of an electric circuit.(   )

8. The trait that appears in all individuals of first generation in Mendel's experiments. (   )

9. The living organism which carries impure trait. (   )

10. The state of an electric conductor that shows the transfer of the electricity from or to it when it is connected to another conductor. (   )

11. The method of connecting the electric cells to produce the greatest e.m.f. (electromotive force) (   )

12. Enzymes act on (lead to) increasing the speed of biological reactions inside the human body. (   )

13. The reaction of oil with caustic soda needs several months to take place. (   )

14. Dwarfism is resulting from the decrease in the secretion of the insulin hormone in human body. (   )

15. Thyroxin hormone liberates the energy necessary for the body from food. (   )

16. Sodium chloride powder reacts faster than a cube of sodium chloride of the same mass. (   )

17. The hybrid individual caries two similar hereditary factors. (   )

18. Copper replaces magnesium in one of its salt solutions. ( )

19. Wide eye is one of the dominate traits in the human being. ( )

20. Electrons are considered as energy store in an atom. ( )

21. The sliding rheostat is used to change the resistance value in an electric circuit.()

22. The chromosome is chemically consists of nucleic acid called DNA bind with the protein. ( )

23. Mendel's second law is called the law of independent assortment of hereditary factors. ( )

24. The decrease in thyroxin hormone due to lack of calcium in food causes simple goiter. ( )

25. $Fe + 2HCl$ (dil) $\rightarrow$ $Fe_2Cl_3 + H_2$ ( )

26. Deficiency of growth hormones during childhood causes dwarfism. ( )

27. By using 3 gm of catalyst in a chemical reaction, its mass after finish the reaction equals 3 gram. ( )

28. Copper replaces gold in it's salt solution, while the opposite doesn't occur. ( )

29. The ability of rolling the tongue is dominant trait in human being. ( )

30. The reaction of covalent compounds is faster than that of the ionic compounds ()

31. Mendel choose ten traits in pea plant to conduct his experiments. ( )

32. Hormone is a chemical message that controls and regulates the activities and functions of most of the body organs. ( )

33. The mass of catalyst decreases at the end of the chemical reaction. ( )

34. The series of chemical activity is an arrangement of metals in ascending order according to their chemical activity. ( )

35. Genes are parts of DNA found in the cytoplasm of the cell. ( )

36. The presence of cheeck dimples is a recessive trait. ( )

37. Chemical reaction is the breaking up of bonds in reactants molecules and the formation of new bonds in the products molecules. (   )

38. The iodine element shares in composing thyroxin hormone. (   )

39. Neutralization is reaction between an alkali and salt forming an acid and water. (   )

40. At the end of a chemical reaction the concentration of reactants equal 100% (   )

41. The international measuring unit of absorbed nuclear radiation is ohm. (   )

42. Oxidation and reduction reactions takes place separately (   )

43. Flow of electric charges from one conductor to another depends on the quantity of electric charges in each of them. (   )

44. Iron element shares in composing thyroxin hormone. (   )

45. The two hereditary factors are similar in the hybrid individual (   )

46. Transmission of electric charges between two conductors which are touched depends on current intensity of the conductors. (   )

47. The human genome project is concerned with the impact of different mutations on the function of genes. (   )

48. Genes are parts of DNA found on chromosomes, (   )

49. By increasing the surface area of the reactants exposed to reaction the chemical reaction stops. (   )

50.Flowers of pea plant easy to be self-pollinated or artificially pollinated. (   )

51. The direct current can be transferred for a long distance across the wires (   )

52. The electric current is the flow of electric positive charges through a conducting material. (   )

53. Genes control the appearance of an individual's hereditary traits. (   )

54. The nuclear wastes with strong radiation is buried at a medium depths underground (   )

55. Mendel let the pea plants self-pollinate for several times to be sure of the purity of this trait. (   )

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(4)write the scientific term :

1. The potential difference between the two poles of an electrical source in an open circuit.

2, An individual who carries a contrasting pair of genes for a particular trait.

3, A chemical substance that changes the rate of a chemical reaction without changing it.

4. Traits that are not transmitted from one generation to another.

5. The trait that disappears completely in the individuals of the first generation in Medel's experiments.

6. The cells which can be used to convert the chemical energy into electric energy.

7.The substance formed by the gene and it is responsible for the occurrence of chemical reaction to form protein and appearance of genetic trait.

8. The spontaneous decay of atoms nuclei of some radioactive elements that are present in nature, In an attempt to achieve more stable composition.

9. The trait that appears in all individuals of first generation in Mendel's experiments.

10. The living organism which carries impure trait.

11. The state of an electric conductor that shows the transfer of the electricity from or to it when it is connected to another conductor.

12. The method of connecting the electric cells to) produce the greatest e.m f.

13. A metallic can exists in most modern cars to treat the harmful gases resulted from burning fuel.

14. The opposition that electric current faces during its passage through a conductor.

15. The traits that are not transmitted from one generation to another.

16. Organs secrete hormones directly in the blood stream

17. The flow of electric negative charges through a conducting material.

18. a chemical substance that controls and organizes most of the vital activities and functions

19. ions exist in the aqueous solutions of the acids.

20. One of the methods of connecting the cells to obtain low electromotive force.

21. The only way to let the hormones of the endocrine glands to reach the target cells.

22. The cells that produce constant intensity and unidirectional electric current.

23. The elements whose atoms' nuclei contain a number of neutrons more than the number required for its stability.

24. Chemical reactions in which one of the elements substitutes another element in a solution of one of its compounds.

25. A chemical process which increases oxygen percentage or decreases hydrogen percentage in the substance

26. The device that is used to measure the electromotive forc e of an electric cell.

27. a Appearance of a hereditary trait in all individuals of the first generation when the two individuals are crossed one of them is carrying a pure hereditary trait contrasting the trait carried by the other individual.

28. The radiation or nuclear energy emitted during nuclear reactions that can be controlled and carried out at nuclear reactors.

29. A physical quantity its measuring unit is volt x coulomb.

30. Parts of DNA that are present on the chromosomes and control the hereditary traits of the individual.

31. Chemical reactions in which the compound decomposes by heat into its simple components.

32. A chemical process in which the atom loses one electron or more.

33. The force needed to overcome the repulsion force between the positively charged protons that found inside the nucleus.

34. A gland that secretes a hormone responsible for the appearance of the male secondary sex characters.

35. Hormone stimulate body's organs to respond to emergencies.

36. Quantity of electric charges that flowing through a cross-section of a conductor in one second.

37. The increase in the amount of radiation in the environment.

38. The measuring unit of absorbed radiation.

39. The quantity of charge transferred by a constant current intensity of 1 ampere in one second.

40. The arrangement of metals in a descending order according to the degree of their chemical activity.

41. The result when one of the endocrine glands does not act properly.

42. The cells through which the hereditary traits are transmitted from parents to the offspring.

43. It is the potential difference a cross two terminals of a conductor on doing a work of one joule to transfer a quantity of charge of one coulomb.

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(5) various questions

1. A work equals 1000 Joule Is done to transfer quantity of electricity equals 100 coulomb through a conductor in a time equals 20 seconds, calculate :

a. The current intensity passing in the conductor

………………………………………………………………………………………….

b. The potential difference between the terminals of the conductor.

……………………………………………………………………………………………………

c. The electric resistance of the conductor

……………………………………………………………………………………………………

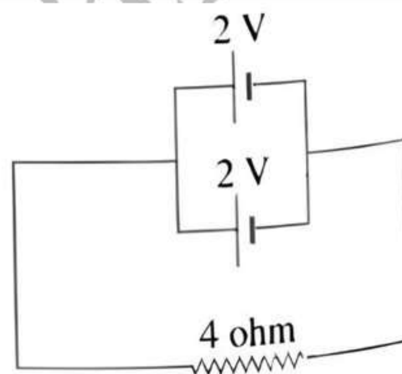
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2. Calculate the electric current intensity that flows through a cross-section of a wire if a charge of 5400 coulomb passes through in 5 hours.

3.

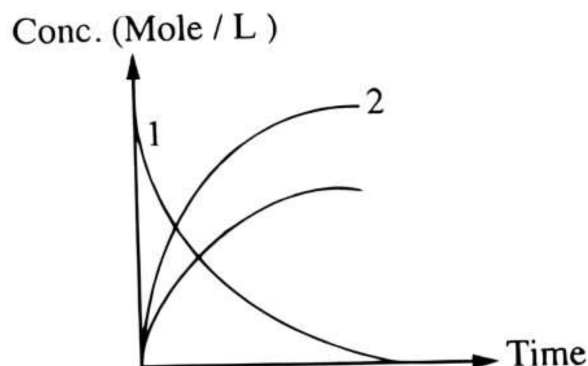
In the opposite figure :

Calculate the electric current intensity that flow through the electric circuit



4.

The opposite figure explains the change in the concentration of reactants and products of the thermal decomposition of sodium nitrate as time passes, complete the following :



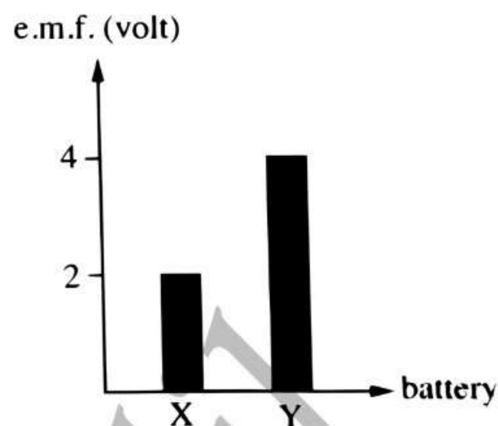
1. Curve (1) represent…………… compound which is known by its…………… colour .

2. Curve (2) represent…………… compound which is known by its…………… colour

5.

The opposite graph represent the electromotive force of two batteries X and Y each of them consists of two similar electric cells e.m.f. each one 2 volt :

draw a diagrammatic figure for each battery



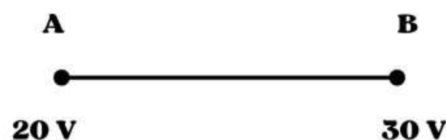
6.

In the opposite reaction : $H_2 + CuO \rightarrow Cu + H_2O$

Determine the oxidizing agent and reducing agent.

7.

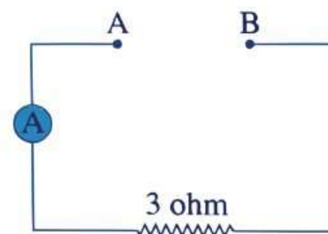
Can an electric current pass through the conductor (wire) when it put in electric circuit from point (A) to (B) ? With explanation ?



8.

In the opposite electric circuit: You have four similar electric cells the e.m.f. of each is 3 volts, are connected between points A and B to form a battery.

Calculate the e.m.f. of the battery to obtain an electric current of 3 amperes ?



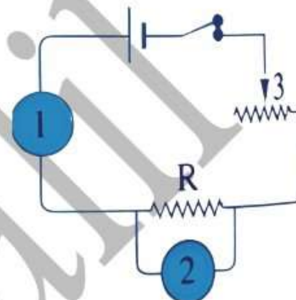
9.

Show by the chemical equations only how can obtain copper from copper sulphate in two different methods ?

10.

Calculate : the amount of work needed to pass an electric charge of 50 coulomb across a conductor with a resistance of 5 ohm and the electric current intensity passes through is 2 ampere.

11.



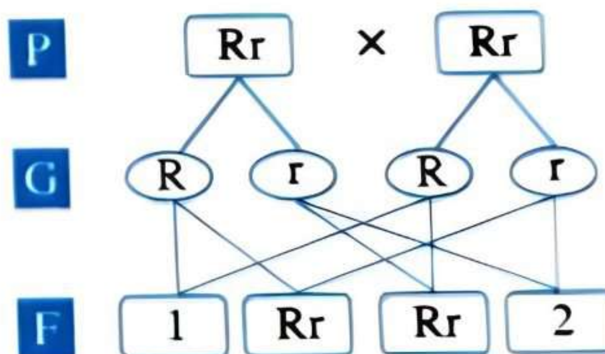
The opposite figure represents a law that you studied :

1. Name this law.

2. Write the text of this law.

12.

The opposite figure that : explains a self-pollination process between two hybrid red flowers pea plant.



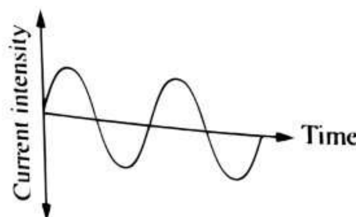
1. Replace labeled numbers with the correct symbols.

2. Results apply the law of independent assortment of hereditary factors ,
put (√) or (x) in front of the statement.

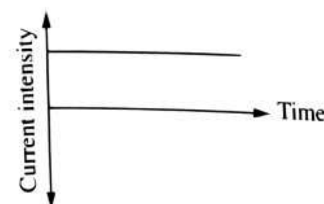
13.

The two following figures represent the two types of electric Current, study then answer :

What is the name of the source Produces the current represented in each figure?

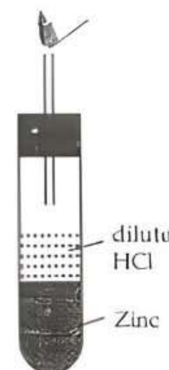


(B)



(A)

14.



In the opposite figure :

On adding diluted hydrochloric acid to zinc, a gas is evolved :

1. Illustrate by a balanced chemical equation the reaction between zinc and diluted hydrochloric acid.

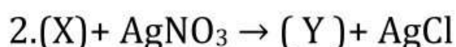
2. What do you observe if zinc is replaced by copper turning ?

15.

From the following reactions :



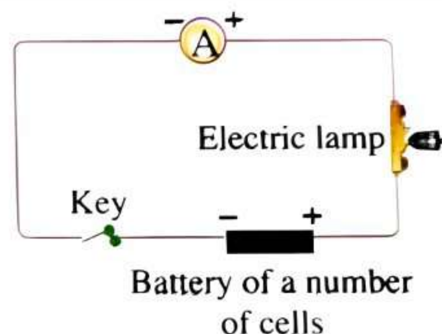
1. $HCl + NaOH \rightarrow H2O + (X)$



2. $(X) + AgNO_3 \rightarrow (Y) + AgCl$

write the chemical formula for (X) and (Y)

16.



In the opposite electric circuit ;

If the ammeter reading is 0.1 ampere and the lamp resistance is 60 ohm and the e.m.f of each cell of the battery is 1.5 volt calculate the number of cell which battery consists of and needed to light the lamp

(6) Give reasons for:

1.Endocrine glands are called by this name.

- Because they secrete their hormones directly in blood without passing through ducts.

2.The stopping of the body growth, so the person become dwarf

- due to the decrease in the secretion of the growth hormone at childhood

3. Some persons have enlarged thyroid gland.

- Due to decrease or increase in the secretion of thyroxin hormone.

4. Pancreas is a mixed gland.

- Because the pancreas acts as a ductless gland which secretes the insulin and glucagon hormones directly to the blood (that regulate the glucose sugar level in blood), and it also secretes digestive juices to the pancreatic duct (that help in digestion process).

5. Diabetes disease is treated with insulin hormone.

- Because it reduces the percentage of glucose sugar in blood.

6.Pituitary gland is called the master gland.

- Because it secretes hormones that regulate the activities of most of other endocrine glands.

7. Learn to walk in children is not considered a genetic trait.

- Because it's acquired trait that can't be transmitted from a generation to another.

8. The skill of playing basketball isn't hereditary trait.

- Because it's acquired trait that can't be transmitted from a generation to another.

9. Mendel covered the Stigmas of the pistils of pea flowers during studying the hereditary traits,

- To prevent cross pollination with other flowers,

10. Mendel let the pea plants Self-pollinate for Several generations,

- To be sure of the purity of the trait.

11. Mendel's first law is known as the law of Segregation of factors,

- Due to segregation of the two factors of hereditary trait from each other during the formation of gametes.

12. The recessive trait is always pure.

- Because it doesn't appear unless the two genes of recessive trait aggregate.

13. When a pure yellow pod pea plant is pollinated with a pure green pod pea plant, they produce plants all are green pods.

- Because the green pod trait dominates over the yellow pod trait in the pea plant according to the principle of complete dominance.

14, DNA is the source of the genetic information of the living organism,

- Because DNA consists of genes which are responsible for appearance of genetic traits of the living organism.

15. The enzymes play an important role in the appearance of the hereditary trait

- Because every gene gives a special enzyme which is responsible for the occurrence a chemical reaction resulting in a protein shows a specific hereditary trait

16. About 500 000 people every year are affected by losing their sight in developing countries.

- As a result of malnutrition which is produced from deficiency in vitamin (A)

17. The atom is electrically neutral.

- Because the number of protons in the nucleus equals the number of electrons that rotate around it.

18. The nucleus is positively charged.

- Because it contains protons (positively charged) and neutral neutrons.

19. The nuclei of radioactive elements are unstable,

- Due to their excess energy as a result of their atoms' nuclei containing neutrons more than required for their stabilization.

20. Uranium is one of the radioactive elements.

- Because the nucleus of its atom contains a number of neutrons more than the number required for its stability which causes the presence of excess energy emitted in a form of invisible (unseen) radiation.

21. Radiation pollution occurs.

- Due to the increase of the amount of radiation in the environment.

22. Explosion of the Russian Chernobyl reactor.

- Due to an error in operation.

23. Radiation has genetic effects

- Because radiation causes s change in the sex chromosomes composition for living organisms

24. The electrons still rotate around the nucleus.

- Due to the attraction force between the protons in the nucleus and electrons.

25. The electrons may leave the atom and move freely.

- Due to the weakness of the attraction force between the protons and electrons.

26. The current flows through the circuit only when it is closed.

- Because when the circuit is closed, all its components are connected.

27. When two conductors have the same potential are connected, no electric current passes

- Because there is no potential difference between them.

28. If the electric current intensity passing through the same conductor increases, then the potential difference across its terminals increases.

- Because the electric current intensity passing through a conductor is directly proportional to the potential difference across it.

29. If you need to charge your mobile phone, you should use the electric transformer

- To reduce the electric potential of the current used and get a suitable electric potential to charge the mobile.

30. The rheostat is used in the electric circuit.

- To control the electric current intensity passing through the circuit and the potential difference in the different parts of the circuit.

31. The rheostat controls the current intensity flowing through the electric circuit.

- Because if we increase the length of the wire, the resistance increases and the current intensity decreases and vice versa.

32. Electric current produced from electric generators is used in lighting and operating electric appliances.

- Because it is an alternating current which is variable in both direction and intensity and it can be changed into a direct current.

33. Some cells are connected in the electric circuit in series.

- To obtain a battery, the e.m.f of it is high.

34. Mendel selected the pea plant to conduct his experiments.

- Due to:
  - It is easy to be planted and it grows fast.
  - Its life cycle is short.
  - Its flowers are hermaphrodite, so it can be self-pollinated.
  - It can easily be artificially pollinated (human intervention)
  - It produces large numbers of plants in a generation. ,
  - It has several pairs of easily recognized contrasting traits

35. On the reaction between sodium with chlorine to form sodium chloride, oxidation and reduction processes occur, although absence of oxygen,

- Because this reaction occurs by losing and gaining electrons.

36. Oxidation and reduction are concurrent processes that happen at the same time.

- Because the number of gained electrons in reduction process equals the number of lost electrons in oxidation process.

37. Using nickel filings in hydrating oil instead of pieces of nickel.

- Because the speed of chemical reactions increases by increasing the surface area.

38. Catalyst is used in some chemical reactions.

- To increase the rate of chemical reactions.

39. Adding a piece of sweet potato increases the decomposition of hydrogen peroxide.

- Because the oxidase enzyme in sweet potato acts as a catalyst which increases the rate of decomposition of hydrogen peroxide into water and oxygen gas.

40. The formation of black substance by heating blue copper hydroxide.

- Due to decomposition of blue copper hydroxide by heat into copper oxide (black) and water. $Cu(OH)_2 + CuO \rightarrow H20$

41. The formation of black substance by heating green copper carbonate.

- Due to decomposition of green copper carbonate by heat into copper oxide (black) and carbon dioxide gas evolves. $CuCO_3 + CuO \rightarrow + CO_2$

---

(7)what happen :

1. When man takes a little amount of iodine in his food.

- This leads to decreasing in secretion of thyroxin hormone and this leads to that the human suffers from simple goiter.

2. When man is exposed to emergency.

- Pituitary gland responds by secretion of adrenal glands activating hormone, so these adrenal glands secrete adrenalin hormone which stimulates body's organs to respond to emergencies.

3. To blood sugar level when pancreas does not secrete glucagon hormone.

- The level of glucose sugar in blood decreases.

4. When testosterone hormone does not secreted at adulthood stage in a male.

- The male secondary sex characters will not be appeared.

5. A dominant gene for one of the traits is present with another for the same characters

- The dominant trait appears.

6, A pea plant of short stem is Pollinated by another of hybrid tall stem.

- the result of the produced generation is 50% hybrid dominant trait : 50% pure recessive trait.

7, Pollination of peas flowers of hybrid yellow seeds with each other,

- They produce a generation of yellow Seeds and green seeds at a ratio of 3: 1 respectively.

8. Mating between two individuals each of them has pure trait of the ability to roll the tongue.

- They produce individuals carry the ability to roll the tongue trait.

9. Dependence on rice as a main food.

- Deficiency in vitamin (A) inside the body which may lead to loss of sight.

10. A group of electric cells are connected in series (related to e.m.f).

- The total e.m.f increases.

11. A man is exposed for a large dosage of radiation for a short time.

- This may lead to the damage of :
  - Bone marrow. - Spleen. - Digestive system.
  - Central nervous system.

12. The red blood cells decrease in the human body.

- This will lead to :
  - Feeling of being sick.
  - Sore throat accompanied by nausea, vertigo and diarrhea.

13. A man is exposed for a small dosage of radiation for a long time.

- This will lead to :
  - Physical effects. - Genetic effects. - Cellular effects.

14. The circuit of Ohm's law doesn't contain variable resistance.

- The current intensity and the potential difference can't be controlled and it doesn't verify Ohm's law.

15. Adding a piece of sodium to water,

- An ignition occurs accompanied by a strong Pop sound



$$2Na + 2H_2O \rightarrow 2NaOH + H_2 + heat$$

16. Adding diluted HCl to a piece of copper.

- No reaction occurs.

17. Passing hydrogen gas over hot copper oxide.

- Hydrogen is oxidized into water, while copper oxide is reduced into copper.

18. Adding a negative catalyst to a rapid reaction.

- The speed of the reaction will be decreased.

Model answer

(1)Choose the correct answer :

1. a	2. A	3. C	4. b
5. a	6. B	7. a	8. c
9. b	10. D	11. C	12. c
13. b	14. D	15. C	16. c
17. b	18. D	19. a	20. b
21. b	22. C	23. D	24. b
25. d	26. A	27. c	28. a
29. c	30. B	31. D	32. B
33. a	34. C	35. B	36. c
37. d	38. A	39. A	40. d
41. b	42. A	43. C	44. b
45. a	46. c	47. A	48. d
49. d	50. B	51. B	52. c
53. b	54. A	55. d	56. a
57. b	58. B	59. C	60. d
61. c	62. B	63. C	64. d
65. c	66. d	67. B	68. a
69. d	70. C	71. B	72. d
73. c	74. B	75. c	76. c
77. c	78. b	79. d	80. c
81. d	82. B	83. A	84. c

85. a   86. C   87. B   88. B   89. C

---

(2) Complete the following sentences :

1. molecules
2. oxygen
3. Sievert
4. neutralization
5. nucleus
6. Radium
7. catalytic convertor
8. AgCl , NaNO3
9. thyroxine
10. insulin
11. ZnCl2, H2
12. protein
13. potential difference
14. recessive
15. Uranium
16. Ali mostafa mosharafa
17. Genes
18. acquired
19. parallel connection
20. Pituitary
21. faster
22. direct
23. thyroxin
24. precipitate
25. black
26. ammeter, ampere
27. electrochemical cell, alternating
28. dominant, recessive
29. (1) YYrr - (2) YyYY
30. direct
31. genetic
32. O2
33. cross (mixed)
34. 20
35. segregate
36. voltmeter
37. acquired
38. chemical
39. chromosomes
40. beginning - stopping
41. e.m.f , electrical potential difference

42. nervous system – hormones

43. self pollination , cross-pollination

44. acquired

45. the cell , hemoglobin

46. acquired , hereditary

47. side position – end position

48. silicon sheets

49. joule

50. genes

51. acquired trait

52.the speed of chemical reaction (reaction rate)

53. concurrent

54. curly or black

55. Glucagon

56. diabetes , insulin

57. simple goiter , thyroxin

58. oxidation process

59. electrochemical cells

60. catalyst

61. industrial

62. series

63. Hereditary traits

64. gametes

65. yellow

66. 100%

67. nature of the reactants , reactants concentration

68. control the electric current resistance

69. zero %

70. red

71. enzyme

72. genetic

73. manganese dioxide , sweet potato

74. dominant

75. blood

76. 4.5

---

(3) Put (√) or (x) :

1. √ 2. X 3. X 4. √

5. √ 6. √ 7. X 8. X

9. √ 10. √ 11. √ 12. √

13. x 14. X 15. √ 16. √

17. x 18. X 19. √ 20. x

21. √ 22. √ 23. √ 24. x

25. x 26. √ 27. √ 28. √

29. √ 30. X 31. X 32. √

33. x 34. X 35. X 36. X

37. √ 38. √ 39. X 40. x

41. x 42. X 43. X 44. X

45. x 46. X 47. √ 48. √

49. x 50. √ 51. X 52. x

53. √ 54. X 55. √

---

(4)write the scientific term :

1. Electromotive force (e.m.f.)
2. Hybrid individual
3. Catalyst
4. Acquired traits
5. Recessive trait
6. Electrochemical cells
7. Enzyme
8. natural Radioactivity
9. Dominant trait
10. hybrid trait
11. electrical potential of a conductor

12. Series connection
13. Catalytic converter
14. electric Resistance
15. Acquired traits
16. Endocrine glands
17. Electric current
18. Hormone
19. positive Hydrogen ions
20. Parallel connection
21. Blood
22. electrochemical cells
23. Radioactive elements
24. simple Substitution reaction
25. Oxidation process
26. Voltmeter
27. the principle of complete dominance
28. artificial radioacticity
29. Work
30. Genes
31. thermal decomposition reactions
32. Oxidation process
33. Nuclear binding force
34. the two Testis
35. Adrenalin

36. Electric current intensity

37. Radiation pollution

38. Sievert

39. Coulomb

40. Chemical activity series

41. hormone disorder

42. Gametes

43. the volt

---

(5) various questions

1.

(a) I = $\frac{q}{t}$ = $\frac{100}{20}$ = 5 ampere

(b) V = $\frac{w}{q}$ = $\frac{1000}{100}$ = 10 volt

(c) R = $\frac{V}{I}$ = $\frac{10}{5}$ = 2 ohm

2.

I = $\frac{q}{t}$ = $\frac{5400}{5 X 60 X 60}$ = 0.3 ampere

3.

I = $\frac{V}{R}$ = $\frac{2}{4}$ = 0.5 ampere

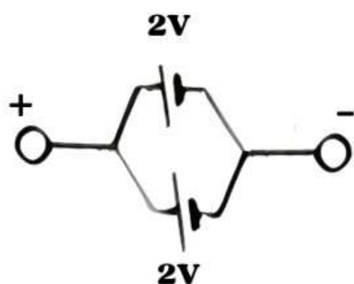
4.

1. sodium nitrate ($2NaNO_3$) — white

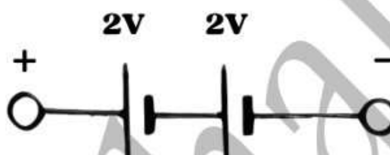
2. Sodium nitrite ($2NaNO_4$) — Yellowish white

5.

(Y)



(X)



6.

Oxidizing agent : CuO , and reducing agent : H_2

7.

NO , because electric current will flow from higher electric potential (B) to lower one

---

8.

V= R x I= 3x3=9 volt

9.



1. $Mg + CuSO_4$ ——» $MgSO_4 + Cu$



2. $CuSO_4$ ——» $CuO + SO_3$: $H_2 + CuO$ ——» H2O + Cu

10.

V =R x I=5x2=10 volt

W=V x q= 10 x 50 = 500 Joule

11.

1. Ohm's law

2. The electric current intensity passing through a conductor is directly proportional to the potential difference across it at a constant temperature.

12.

(1) RR . (2) rr

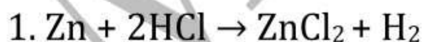
2. (X)

13.

(A) Electrochemical ells

(B) Electric generator (Dynamo)

14.



1. $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

2. No reaction occurs.

15.

1. (X) : NaCl   2. (X) : NaCl , (Y) : $NaNO_3$

16.

$V = R \times I = 60 \times 0.1 = 6$ volt.

$E_{battery} = n \times E_1$

6 volt $= n \times 1.5$

The number of cells $= \frac{6}{1.5} = 4$ cells

حمل الآن

مجانا وحصريا

المراجعة رقم (4)

الترم الثانى





Final Examinations

(I) Complete the following statements:

1- In human, some traits are not transmitted from one generation to another and they are called the .... traits.

2- The electromotive force of several similar cells connected in .... is equal to the e.m.f. of one cell.

3- The .... gland secretes hormone that regulate the growth and development of sex organs in human.

4- Ionic compounds reactions are .... than that of the covalent compounds.

5. The only way for the hormone to reach their sites of action is ....

6. When we connect three similar cells, the electromotive force of each one 1.5 volt in a series connection, then the electromotive force of the battery produced is equal .... volt.

7. The decreasing of secretion of the growth hormone at the childhood causes .... disease in the human.

8. To control in the value of electric current intensity that passes in the different parts of the electric circuit, we use .... apparatus.

9. The rate of decomposing hydrogen peroxide increases by adding .... or a piece of ....

10. The ability to roll the tongue is from the .... genetic traits in the human.

11. The .... is used to measure the current intensity.

12. The change in the concentration of the reactants and the products in the unit time is known as ....

13. Oxidation and reduction are two .... processes.

14. The chromosome chemically consists of nucleic acid (DNA) bind with...............

15. The dominant trait is the .... hair in human.

16. Electric generators produce .... current, while dry cells produce .... current.

17. $Na_2CO_3 + 2HCl \longrightarrow$.............. + H_2O + ...

18. The international unit for measuring the absorbed radiation by humans is .... While Volt x Ampere × Second is equivalent to ....

19. When the amount of iodine in the human diet decreases, secretion of the …………… hormone decreases and leads to infection with ……………

20. When approaching a burning fragment to ………… gas, it leads to explosion and ignition. While, when approaching it to …………… gas, it causes the growing of the burning match.

21. In the reaction: $2Na + Cl_2 \rightarrow 2NaCl$ ($_{11}Na$ – $_{17}Cl$), The substance which is oxidized is ………………, and the oxidizing agent is ………………

22. The function of ……………… hormone is opposite to that of insulin hormone which are secreted by the pancreas.

23. Feeling very thirsty and multiple urination times is description of ……….. disease, and the reason is the decreasing in the secretion of the …………… hormone.

24. The chromosome is chemically consisted of a nucleic acid called DNA binds with ……………

25. Transmission of electric charges depends on the ……….. between two conductors.

26. The attached ear lobe is one of the …………… traits in the human.

27. Henri Becquerel discovered the emission of an unseen rays from ……….. element.

28. Nuclear energy can be used in industrial field to convert sand into ………..

29. The unit that is used in measuring work is ………………

30. The Mendelian hereditary trait in living organism is controlled by one pair of ………………

31. The traits that are not transmitted from one generation to another are called ……………

32. The current produced from electrochemical cells is the……….

33. When the amount of iodine decreases in food the secretion of the ……….. hormone decreases.

34. The double substitution reactions between salt solutions are a e accompanied by the formation of ……………

35. The colour of copper carbonate changes from green to …………… when heated.

(2) Correct the underlined words:

1. Sodium metal reacts with water producing sodium hydroxide and **oxygen** gas evolves.

2. E.m.f. of battery made up of cells connected in series equal **multiplication** of e.mf. of these cells.

3. Speed up the chemical reaction by using catalysts is called a **negative** catalysts.

4. The living organism that carries two similar factors is called **hybrid** individual.

5. In the reaction: $H_2 + CuO \xrightarrow{\Delta} Cu + H_2O$, the **hydrogen** is oxidizing agent.

6. The genetic structure of a pea plant, wrinkled and green seeds is **RrYy**.

7. The number of collisions between the reactant molecules decreases with **increasing** the temperature.

8. The check dimples from the **recessive** human traits.

9. Mendel's second law is known as the law of **segregation of factors**.

10. From the properties of alternatig current is **constant** intensity and direction.

11. Some chemical reactions need several months to take place such as **reaction of oils with caustic soda**.

12. The electromotive force of three similar cells connected in parallel is **twice** the electromotive force of one cell.

13. The decrease in the secretion of the gland (in the figure in front of you) causes **dwarfism**.



14. The chemical formula of silver nitrate is **$NaNO_3$**.

15- **Testosterone** hormone promotes the growth of endometrium.

16. On heating copper hydroxide, **copper and hydrogen** are formed.

17. Most of metals sulphate decomposed by heating into **the metal** and sulphur trioxide.

18. Mendel choose **five** genetic traits in pea plant for his experiments.

19. On adding 2 grams of a catalyst to a chemical reaction so at the end of the reaction the mass of the catalyst become **one** gram.

20. Mendel's first law is known as **independent assortment of the factors**.

21. Mendel's second law is called the law **of segregation of factors**.

22. **A white** precipitate is formed when magnesium is added to copper sulphate solution.

23. The ohmmeter is used to measure the **electric charge**.

24. The pancreas secretes **estrogen** hormone when the blood sugar level drops.

25. Most metal sulphates decompose when heated to metal oxide and **carbon dioxide gas**.

26. The **alternating** current can only be transported for short distances.

27. Na_2CO_3 + **H_2SO_4** $\rightarrow 2NaCl + H_2O + CO_2$

28. The effects of radiation on a human body can be divided into **four** groups.

29. Mendel removed the **petals** from the flowers of pea plant to prevent the self-pollination.

30. The ionic compounds are fast in their reactions, because they decompose into **molecules** that easy share in the reaction.

31 Each **chromosome** produces a special enzyme which is responsible for producing a type of protein.

32- Speed (Rate) of chemical reaction is increased by **decreasing** the temperature.

33- In the reaction: $H_2 + CuO \overset{\Delta}{\rightarrow} Cu + H_2O$ **hydrogen** is an oxidizing agent.

34- The resistance of a conductor that 1 ampere is passed through it when the potential difference between its terminals is 1 volt equals **10 ohm**.

35- In **positive catalytic** reactions, catalyst is used to slow down the chemical reaction.

36- The first which is affected by exposure to large dosage of radiation for a short time is the **stomach**.

37- When the level of sugar decreases in the blood, pancreases secretes **insulin** hormone.

38- If the potential difference between two terminals of a conducted equals 3 volt, to transfer an electric charge of 5 coulomb. So the value of the work done equals **45 ohm**.

39- Hormones transfer from their sites of secretion to reach their sites of action by the **skin**.

40- The radioactive element nuclei contain a number of **protons** more than the number required for stability.

41- The dynamo is used to convert the **chemical** energy into electric energy.

42- Cosmic radiation is considered as **artificial** source of radiation pollution.

43- Most metal sulphate is decomposed by heat into **metal** and sulphur trioxide.

44. The hereditary traits are found inside the **cytoplasm** of the cell of the living organism.

---

(3) Write the scientific term of each of the following sentences:

1. The change in the concentration of the reactants and products at unit time.
2. The opposition that the electric current faces during its passage through a conductor.
3. Organs secrete hormones directly in the blood stream.
4. The state of an electric conductor that shows the transfer of the electricity from or to it, when it is connected to another conductor.
5. The potential difference between the two poles of the battery when the electric circuit is open.
6. The change in the concentration of the reactancts and products at a unit time.
7. The elements whose atoms' nuclei contain a number of neutrons more than the number required for its stability.
8. Chemical reactions in which one of the elements substitutes another element in a solution of one of its compounds.
9. A chemical process which increases oxygen percentage or decreases hydrogen percentage in substance.
10. Genetic traits that are not transmitted from one generation to another.
11. A substance which changes the rate of the chemical reaction without being changed.
12. A chemical messages that controls and organizes most of the activites and functions in the bodies of living organisms.
13. Ions exist in the aqueous solutions of the acids.
14. One of the methods of connecting the cells to obtain low electromotive force.
15. The only way to let the horomones of the endocrine glands to reach the target cells.
16. The cells that produce constant intensity and unidirectional electric current.
17. The device that is used to measure the electromotive force of an electric cell.

18. The trait that disappears in all individuals of the first generation in Mendel's experiment.
19. Appearance of a hereditary trait in all individuals of the first generation when the two individuals are crossed one of them is carrying a pure hereditary trait contrasting the trait carried by the other individual.
20. The radiation or nuclear energy emitted during nuclear reactions that can be controlled and carried out at nuclear reactors.
21. The potential difference between the two poles of an electrical source in an open circuit.
22. An individual who carries a contrasting pair of genes for a particular trait.
23. A chemical substance that changes the rate of a chemical reaction without changing it.
24. Traits that are not transmitted from one generation to another.
25. A physical quantity its measuring unit is volt x coulomb.
26. The individual that carries a different pair of genes, one is dominant and the other is recessive.
27. It is the flow of electric negative charges in a conducting substance.
28. The trait that doesn't be transmitted from one generation to another.
29. Organs secrete hormones directly in the blood stream.
30. The flow of electric negative charges through a conducting material.
31. A chemical substance that controls and organizes most of the vital activities and functions.
32. The opposition that the electric current faces during its passage through a conductor.
33. The chemical substance that controls and organizes most of body vital activities.
34. A chemical process in which an atom of the element gains one electron or more.
35. The disease caused by the decrease in the secretion of thyroxin hormone.
36. Compounds their reactions are slow and occur between their molecules.
37. The trait that disappears completely in the individuals of the first generation in Medel's experiments.
38. The cells which can be used to convert the chemical energy into electric energy.

39. The substance formed by the gene and it is responsible for the occurrence of chemical reaction to form protein and appearance of genetic trait.

40. The spontaneous decay of atoms nuclei of some radioactive elements that are present in nature, In an attempt to achieve more stable composition.

41. The arrangement of metals in a descending order according to their chemical activity.

42. The quantity of charges transferred by a constant current intensity of one ampere in time of one second.

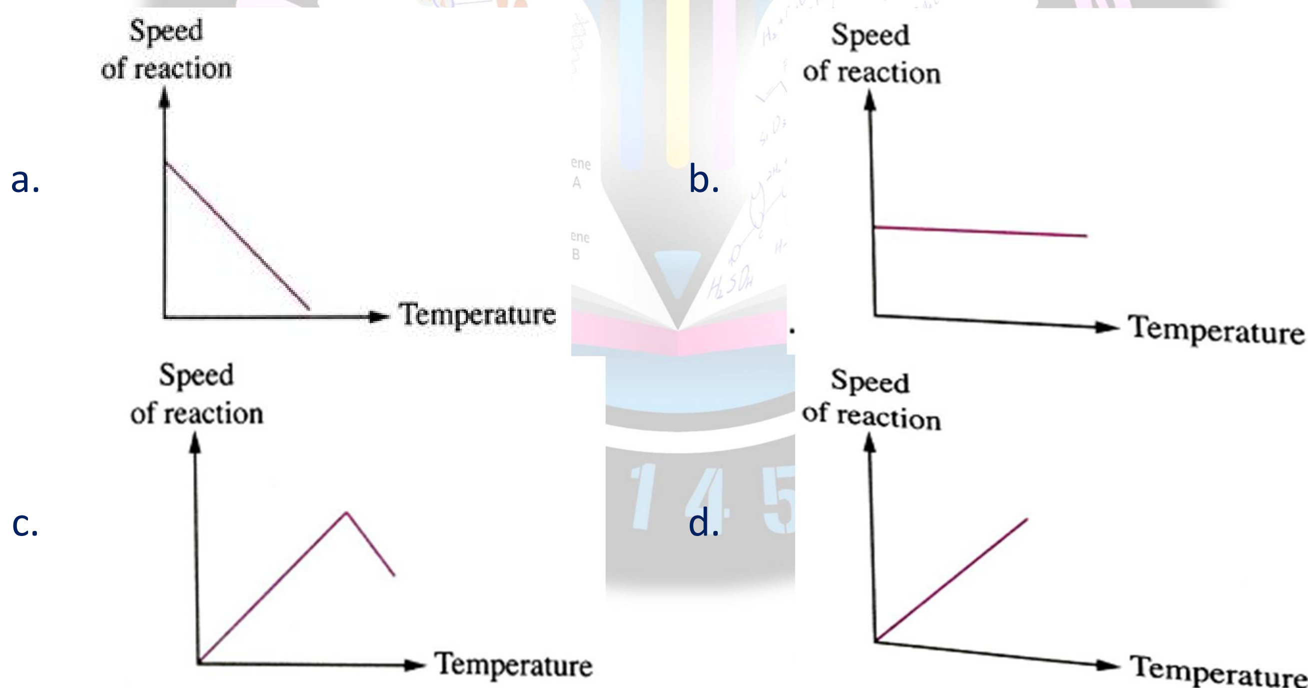
43. The trait that appears in all individuals of the first generation in Mendel's experiment.

44. Parts of DNA that are present on the chromosomes and control the hereditary traits of the individual.

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(4) Choose the correct answer:

1. Which of the following graphical relations represents the relation between the speed of chemical reaction and the temperature.



2. The instrument which is used to control the resistance in the electric circuit is ……………….

a) rheostat. b) ammeter. c) voltmeter. d) ohmmeter.

3. The hereditary factors …………… when the gamets are formed, that as Mendel's first law.

a) duplicate b) disappear c) segregate d) merge

4. Aluminium practically lates in its reaction with hydrochloric acid due to the presence of …………… layer.

a) aluminium chloride
b) aluminium oxide
c) aluminium hydroxide
d) aluminum sulphate

5. The reaction between sodium chloride solution and silver nitrate solution is from ……………. reactions.

a) fast
b) medium
c) slow
d) very slow

6. is consists of two lobes which located in the front surface of the neck on both ………… sides of the trachea.

a) Two adrenal glands
b) Pituitary gland
c) Thyroid gland
d) Pancreas gland

7. On heating …………. compound, oxygen gas is evolved.

a) $Cu\ (OH)_2$
b) $CaSO_4$
c) $CuCO_3$
d) HgO

8. The hormone which responsible of the appearance of the female secondary sex characters is …………..

a) progesterone.
b) testosterone.
c) adrenalin.
d) estrogen.

9. The reaction between the ions of sodium chloride with silver nitrate is the example of …………. reaction.

a) slow
b) fast
c) very slow
d) average

10. The ratio between the potential difference across two ends of a conductor and the current intensity that passes through it is known as……………..

a) the electromotive force.
b) the quantity of electricity.
c) the electric resistance.
d) the electric current.

11. When magnesium replaces copper in its salt solution, then a ……….. precipitate is formed.

a) black
b) white
c) red
d) blue

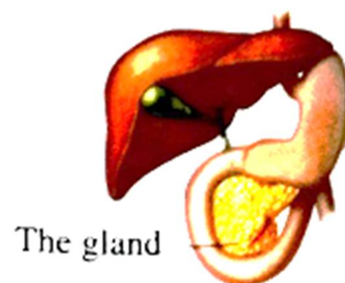
12. The radiologist should not be exposed to a radiation dose more than ……….. millisevert per year.

a) 5
b) 10
c) 15
d) 20

13. The product of multiplying current intensity by the time needed to flow that current, produces a physical quantity which is measured by a unit called ……………

a) ampere.
b) coulomb.
c) ohm.
d) volt.

14. The gland illustrated in the figure in front of you, secretes two hormones which are …………….



a) thyroxin and calcitonin.

b) thyroxin and adrenalin.

c) insulin and glucagon.

d) estrogen and progesterone.

15. The results of blood analysis in one of the medical laboratory for a person who is a worker in the nuclear energy authority, illustrates that: there is a change in the chemical composition of the blood's hemoglobin, so that is from the ……………….. effects of the nuclear radiation.

a) cellular b) physical c) chemical d) genetic

16. If crossing takes place between a male and a female, the genetic composition for each of them is (Bb), so the ratio between the resulting offspring which carry the genetic composition (BB) to the total number of offspring is ……………………..

a) $\frac{1}{2}$ b) $\frac{3}{4}$ c) $\frac{1}{1}$ d) $\frac{1}{4}$

17. All of the following are measuring units of elecric current intensity except ……………

a) Ampere b) $\frac{colomub}{second}$ c) $\frac{joule \times ohm}{coulomb}$ d) $\frac{joule}{coulomb \times ohm}$

18. The reducing agent is a substance ……….. during the chemical reaction.

a) gives oxygen b) takes away oxygen

c) takes away hydrogen d) gains electrons

19. The device that is used to measure the electric resistance is ………..

a) the ohmmeter. b) the ammeter.

c) millivolt meter. d) the barometer.

20. On adding hydrochloric acid to a piece of silver ………….

a) silver chloride is formed. b) silver hydroxide is formed.

c) silver oxide is formed. d) no reaction occurs.

21. This reaction ($Cl_2 + 2e^- \rightarrow 2C1^-$) expresses a ……….. process.

a) decomposition b) oxidation c) reduction d) substitution

22. If the current flowing through an electrical resistance of 10 ohm is doubled, then the value of the resistance is ………… ohm at a given temperature.

a) 5 b) 10 c) 20 d) 40

23. When nitrogen pentoxide gas is decomposed, ……………. gas is evolved.

a) nitrogen b) carbon dioxide c) hydrogen d) oxygen

24. Genes control the appearance of genetic traits of an organism by production of ……………

a) hormones. b) chromosomes. c) enzymes. d) vitamins.

25. When two pea plants were crossed, both were tall-stemmed, and the resulting offspring was $\frac{3}{4}$ percent of tall-stemmed plants and $\frac{1}{4}$ percent of short-stemmed plants, then the genotype of the two crossed plants was……………

a) Tt x Tt b) tt x Tt c) Tt x TT d) tt x tt

26. Active metals substitute hydrogen of water to produce ………… and hydrogen gas evolves …………..

a) metal hydroxide b) metal oxide

c) metal carbonate d) metal sulphate

27. In decomposition reactions, the compound decomposes into ……………

a) simple components. b) primary elements.

c) other compounds d) all the previous.

28. Scientists have found that the ………… are DNA parts present on the chromosomes.

a) gametes b) genes c) cytoplasm d) no right answer

29. A chemical compound has green color and when heated changes into black with evolving a gas changes limewater into turbid is …………

a) $NaNO_3$ b) $CuCO_3$ c) $CuSO_4$ d) $Cu(OH)_2$

30. We should not be exposed to nuclear radiation, knowing that the limit of the safe dose of radiation for public should not be exceed …………… per year.

a) 1 sivert b) 0.01 sivert c) 0.001 sivert d) 20 millsivert

31. A chemical compound has white color and when heated changed into yellowish white with evolving oxygen gas is ………………

a) $CuCO_3$. b) $NaNO_3$. c) H_2O. d) $Cu(OH)_2$.

32. According to Ohm's law and assuming constant temperature, when the potential difference between two terminals of conductor doubled so the resistance of conductor ………………

a) doubled. b) decreases to half.

c) remains constant. d) increases four times

33. In adding silver nitrate solution to sodium chloride solution, ……….. precipitation is formed from silver chloride.

a) red b) blue c) black d) white

34. The charge transferred by a constant current of intensity one ampere in one second is known as ……………

a) ohm. b) coulomb. c) volt. d) ampere.

35. The active metals can replace the hydrogen of water forming ……………. and hydrogen gas evolves.

a) metal hydroxide b) metal oxide

c) metal carbonate d) metal sulphate

36. The unit of measuring the absorbed radiation is …………

a) joule. b) coulomb. c) sievert d) newton

37. From the compounds which decompose by heat into metal and oxygen is ………………

a) HgO b) $CuCO_3$ c) $CuSO_4$ d) $Cu(OH)_2$

38. The genetic structure of smooth green colored seeds of a pea plant is…………

a) YYSS b) yyss c) YYss d) yySS

39. Enzymes act as …………… in most of biological process.

a) oxidizing agent b) detergent agent c) catalysts d) reducing agent

40. Malnutrition produced as a result of deficiency of vitamin (A) in the body may lead to ………………

a) cancer disease. b) losing the sight. c) pollo. d) deafens.

41. On heating copper sulphate, a ………… colour precipitate is formed.

a) yellow b) blue c) red d) black

42. Genes control the organism genetic characteristics by producing ……….

a) hormones. b) enzymes. c) catalyst. d) vitamins.

43. Electromotive force and potential difference have same measuring unit is ………..

a) ohm/ampere. b) ampere/ohm.

c) coulomb/joule. d) joule/ampere. second.

44. The …………… hormone stimulate glucose storage in the liver.

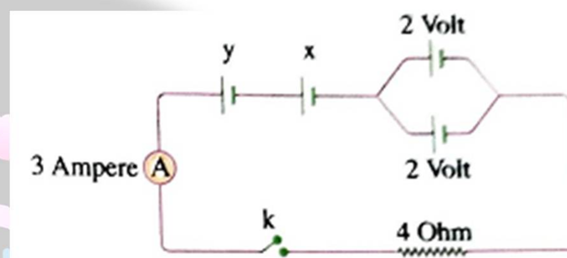
a) calcitonin b) thyroxin c) glucagon d) insulin

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(5) In the opposite circuit:

(A)

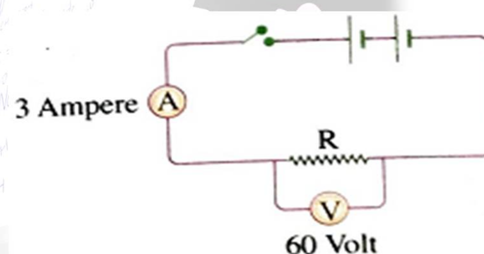
When closing the key, calculate the value of the electromotive force of a dry cell (x) (knowing that: the dry cells (x) and (y) are similar)



(B)

In the opposite electric circuit: Calculate each of the following:

1. The work done by the battery (measured by joule) to transfer an electric charge through 2 seconds.
2. The value of the electric resistance (measured by ohm).



(C)

Study the opposite figure, then answer the following:

1. Noticed that the reaction is slow due to the formation of a compound which is hard to decompose. Write the chemical formula for that compound.
2. Mention the oxidizing agent in the reaction from the following (Al^{+3} – H_2 – Al – H^+)



(D)

From the opposite figure:

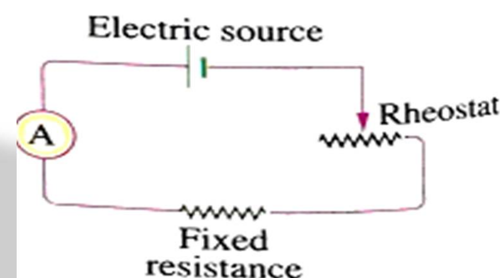


1. Mention a suggestion to increase the amount of the evolved hydrogen gas.

2. Determine the reducing agent in that reaction.

(E)

The reading of the Ammeter increases when:



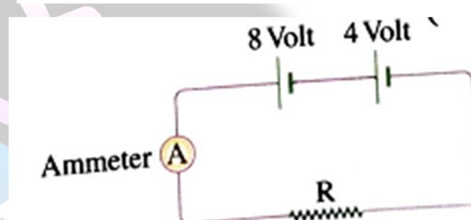
1. ……………… the resistance of the rheostat.

2. ……………… the electromotive force of the source.

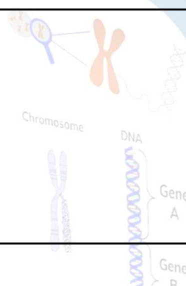
(Complete by suitable words)

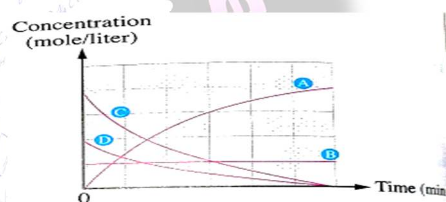
(F)

what is the value of the resistance (R) which make the reading of the ammeter (4 Amperes)?



(G)





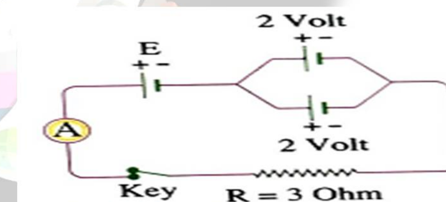
1. Reactants

2. Products

3. Catalysts

(H)

Calculate the value of (E) that makes the ammeter reading is 2 amperes.



(J)

If you know that the electromotive force for each cell is 4 volt.

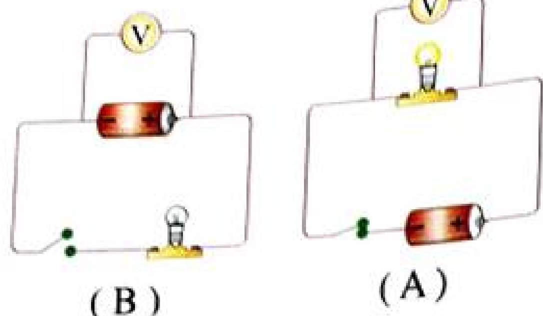
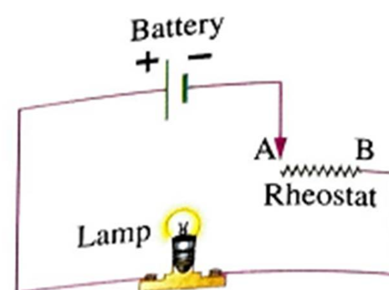
1. Calculate the reading of voltmeter.

2. Calculate the current intensity which passes through the 4 ohm resistance when the circuit is closed.

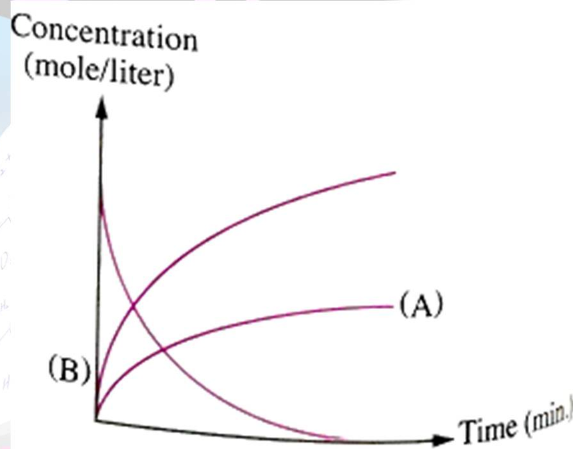


(K)

From to figures in front of you answer what is required below:

Fig (1)	Fig (2)
	
-In Figure (A) the voltmeter is used to measure ……………… - In Figure (B) the voltmeter is used to measure …………………	- What happen to the illumination of the lamp, when the slider of the rheostat moves from point (A) to point (B) and state the reason?

(L)



The opposite graph illustrates: The breaking up of SO_3 into SO_2 and O_2 as the following equation : $2SO_3 \xrightarrow{\Delta} 2S_2 + O_2$

(a) 1. By the end of the reaction, the concentration of SO_3 will be equal to …………… mole/liter .

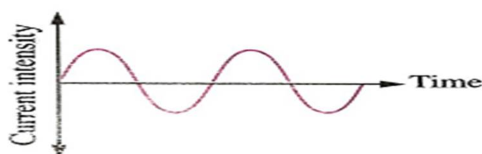
2. The graphical (A) demonstrates the concentration of ……………

(b) If we add a catalyst to the previous reaction. Draw a graphical line from the point (B) demonstrates this catalyst.

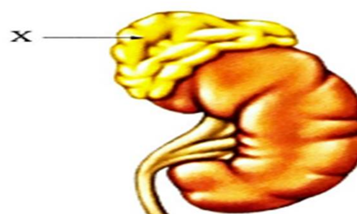
(6) Study the following figures, then answer:

(A)

1. In figure (1), the type of current is ……………………..
2. This current produced from …………………………
3. In figure (2), the name of gland which the arrow (x) points to is ………….
4. The name of hormone that is secreted by this gland is ………………..



(1)



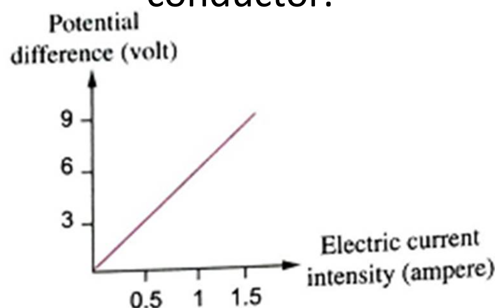
(2)

(B)

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Fig (1)

The figure represents the relation between the potential difference and electric current intensity for a conductor.



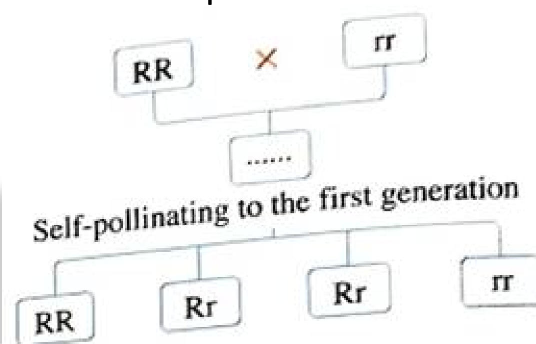
1. The value of the resistance to the conductor equals …………

2. From the relation: Conclude the resistance definition.

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Fig (2)

The figure represents cross-pollination between a white flower pea plants and red a flower pea plants.



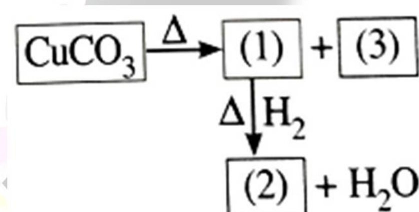
3. Determine the symbol of first generation.

4. State the reason: There is no white flower pea plants appear in the first generation.

</td>
</tr>
</table>

(C)

Study the reactions in the diagram in front of you, then answer:



1. Write the chemical formulae for the substances number (1,2,3)

2. How can you detect number (3)?

(7) Put (✓) or (x) in front of the following statements:

1. The electric current is the flow of electric positive charges through a conducting material.	( )
2. Genes control the appearance of an individual's hereditary traits.	( )
3. The nuclear wastes with strong radiation is buried at a medium depths underground.	( )
4. Mendel let the pea plants self-pollinate for several times to be sure of the purity of this trait.	( )
5. Some metal hydroxides decompose by heat into metal oxide and oxygen gas.	( )

6. Genes are considered as parts of DNA present in the cytoplasm of the cell.	( )
7. The speed of the chemical reaction depends on a lot of factors such as the temperature of the reaction.	( )
8. Thyroid gland secrets calcitonin hormone that controls the level of calcium in the blood.	( )
9. Flowers of pea plant easy to be self-pollinated or artificially pollinated.	( )
10. The direct current can be transferred for a long distance across the wires.	( )
11. Mendel removed the anthers of pea flowers after maturation of the anthers.	( )
12. Electromotive force of a group of similar electric cells connected on parallel equal the electromotive force of one electric cell.	( )
13. The potential difference between two conductors determines the transference of the electric charges to and from an object when it is conducted to another conductor.	( )
14. The current intensity produced due to the flow of an amount of electricity 5400 coulomb in 5 minutes is 18 ampere.	( )
15. Endocrine glands secrete more than 500 hormones in the human body.	( )
16. Growth hormone is secreted by the testicles.	( )
17. Estrogen hormone promotes the growth of endometrium.	( )
18. Sweet potato contains oxidase enzyme which acts as a catalyst.	( )
19. Gigantism disease is a continuous growth in the limb's bones due to deficiency of growth hormone at the childhood.	( )
20. Nitrogen pentoxide breaks up into nitrogen dioxide and nitrogen gas.	( )
21. Neutralization is a reaction between salt and water to form an acids and an alkali.	( )
22. When a hybrid red flowers pea plant is pollinated with white flowers pea plant, all the produced plants are red flowers pea plants.	( )

23- Genes are parts of DNA found on chromosomes.	( )
24- By increasing the surface area of the reactants exposed to reaction, the chemical reaction stops.	( )
25- Gigantism is a continuous growth in limbs bones in childhood.	( )
26- The e.m.f. of three similar cells connected in parallel is equal to the e.m.f of one cell.	( )
27- Adrenalin hormone stimulate body's organs to respond to emergencies.	( )
28- The ohmmeter is used to measure the potential difference of an electric circuit.	( )

(8) Choose from column (B) what suits it in column (A):

(A)

(A)	(B)
1. A white colour chemical compound when heated it turns yellowish white and (O_2) evolves. 2. A green color chemical compound when heated it turns black and (CO_2) evolves. 3. The electric source in which kinetic energy is converted to electric energy. 4. The international unit for measuring the absorbed radiation.	a. the electric generator (dynamo). b. the electric cell. c. the sievert (SV) d. milli volt e. $CuCO_3$ f. $NaNO_3$ g. $Cu(OH)_2$

(B)

(A)	(B)
1. Ampere 2. Pea seeds are smooth in shape and yellow in color. 3. Ohm. 4. Pea seeds are wrinkled in shape and green in color.	a. volt/ampere. b. carries two recessive traits. c. coulomb/second d. carries two domir traits . e. carries two domincer or recessive traits.

(C)

(A)	(B)
1. Learning of walking in children is from the 2. Used to adjust the value of the electric current intensity and potential difference in the circuit 3. The law of segregation of factors is the law of Mendel 4. The region chosen to store radioactive wastes	a. voltmeter. b. Mendel's second law. c. hereditary traits. d. sliding rheostat. e. Mendel's first law. f. should be stable. g. acquired traits. h. should be unstable.

(D)

(A)	(B)
1. The region chosen to store radioactive wastes 2. Sodium nitrate decomposes, by heating 3. Aluminium replaces hydrogen of dilute acid 4. The alternating electric current	a. salt of an acid is formed and hydrogen gas evolved. b. has a variable intensity and direction. c. should be stable. d. and produce yellowish white substance and oxygen gas evolved. e. should be unstable. f. has a constant intensity and direction.

(9) Join from group (A) what suits in group (B):

(A)

(A)	(B)
1. Used to measure the electric current intensity.	a. the nucleic acid DNA.
2. Carries the hereditary traits of the living organism.	b. the ammeter.
3. Used in drilling for petroleum and underground water.	c. the reducing agent.
4. The substance which loses one or more electrons during a chemical reaction.	d. the nuclear energy.

(B)

(A)	(B)
1. Medicines	a. the equivalent unit to it is joule/coulomb.
2. Electric generator	b. no chemical changes or decrease in mass occurs to it.
3. The volt	c. from the products of the chemical reactions in our life.
4. From the properties of the catalyst	d. act to change the kinetic energy into electric energy.

(10) Complete the spaces in the following table:

The hormone	The gland which secretes it	Its importance
…….(1)………	…….(2)………	Regulates the general growth of the body
Estrogen	…….(3)………	…….(4)………

(11) Choose the odd word from the following:

1. Radium - Uranium - Magnesium - Cesium.
2. Products' volume-Reactants' concentration - Temperature - Catalysts .
3. Ampere - Volt - Ohmmeter - Ohm.
4. Potassium - Gold - Sodium - Calcium.
5. Its flowers are hermaphrodite – Difficult to plant – Shortness in its life cycle – Easily artificially pollinated.
6. Car driving – Speaking in English language – Learning of walking in children – Skin colour.

(12) Cross out the odd word and join between the remain words:

1. Type of bonding in reactants - Temperature of reaction - Surface area of reactants exposed to reaction.
2. Free ear lobe - Smooth hair - Narrow eyes - Freckles.
3. Reaction between an acid and an alkali - Simple substitution reaction - Reaction of an acid with a salt – Reaction of a salt solution with another salt solution.
4. Hair color – Skin color - Number of fingers - The blood groups - Speaking in many languages.

(13) Determine the odd (anomalous) word in each:

1. Radium - Uranium - Aluminium - Polonium.
2. Electric cell - Battery - Electric generator - Rheostat.
3. Estrogen - Progesterone - Testosterone - Adrenalin.
4. Dwarfism - Gigantism - Long sightedness - Exophthalmic goiter.

(14) Explain on genetic bases:

A- The properties of the produced generation from mating between two individuals both have hybrid curly hair. (knowing that the curly hair gene symbolized by B and smooth hair gene symbolized by b)

B- The mating between two pea plants, one of them is hybrid red flowers and the other is white flower, knowing that the symbol of the dominant trait is (R) and the recessive trait is (r).

C- When sodium reacts with the chlorine gas to form sodium chloride the oxidation and reduction process in occur, although there is no oxygen.

(15) What are the results that related to each of the following?

1. Connection between two charged conductors (the potential difference between them is zero) by a connecting wire.
2. An endocrine gland worked by abnormal from.
3. Putting small piece of sodium in a beaker containing water.
4. A gene failed to produce its own enzyme.
5. Replacing dilute hydrochloric acid by concentrated hydrochloric acid when reacting with magnesium.
6. Two pure individuals bearing two pairs of contrasting traits are crossed.

(16) To who these works related?

1. The founder of heredity.
2. Discovered the relation between current intensity and potential difference.
3. The discovery of the radioactivity phenomenon.
4. Discovered the means of how the gene controls the appearance of a trait.

(17) If the work done to transfer a charge of 200 coulomb between two points is 22000 joules.

Calculate the potential difference between the two points.

(18) Choose the correct answer from brackets and put it in the suitable place in each statement of the following:

(Henri Becquerel – Ohm – Gametes – Ali Mostafa Moshrafa – Gregor Mendel – Genes)

1. Basics of manufacturing the atomic bomb were based on the theories of the scientist ………………

2. ……………… are considered as parts of the nucleic acid DNA, and they are responsible for appearing the individual's hereditary traits.

---

(19) Put the suitable word in the missing parts in the following sentences:

(hydrogen - artificial – oxygen - natural - ohmmeter – oxidizing agent – ammeter- oxidization)

1. Cosmic rays are considered from the sources of ……….. radiation pollution.

2. Some metal nitrates decompose into metal nitrite and ……….. gas evolves.

3. A device that is used to measure the electric current intensity, …………..

4. The substance which gives oxygen or takes away hydrogen during a chemical reaction,………………

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(20) In the following reaction:



$2Na + Cl_2 \longrightarrow 2NaCl$

Explain by equations the oxidation and reduction that occur to sodium and chlorine elements.

---

(21) Compare between each of the following:

1. The direct current and the alternating current (according to the ability to transfer it through wires).

2. Mendel's first law, and Mendel's second law (according to the name).

---

(22) What is meant by ? …

1- The work done to transfer a quantity of charge 8 coulomb between the two poles of this conductor equal 64 Joule.

---

(23) Show by balanced symbolic equations the following reactions:

1. Diluted hydrochloric acid with sodium carbonate.

2. Sodium element with water.

---

(24) What is the result of … ?

1- Replacing a piece of iron with iron filings of the same mass when reacting with diluted acids.

2- Two conductors having the same electric potential are connected together by a wire.

---

(25) In front of you in the school lab the following substance:

(Hydrochloric acid – Sodium carbonate – Silver nitrate - Sodium chloride)

How can you get:

1. White precipitate. 2- A gas turbids limewater.

(Illustrate by chemical equations only)

(26) What is the function for each of the following ... ?

1. The voltmeter. 2. The dynamo.

(27) Mention the disease that results from hormone disorder in the human body in the following cases:

1- Decrease in the secretion of the growth hormone at the childhood .

2- Increase in the secretion of thyroxin hormone.

(28) Mention one importance for each of the following:

1. The rheostat. 2. The nuclear binding forces.

(29) Calculate:

(A) the quantity of electricity that passes through a conductor, its resistance 2200 ohm for 120 seconds when it is connected to a source its potential difference equals 220 volt.

(B) potential difference between the terminals of a conductor: When an electric current passes through it of (5 Ampere) intensity if the work done is (200 joule) within (2 second)?

(C) Calculate the amount of work required for a charge of 40 coulombs to pass through a section of a conductor whose resistance is 10 ohms and the current flowing through it is 2 Amperes.

(30) Extract the unsuitable word (or statement) then write what connects among the rest words (or statements):

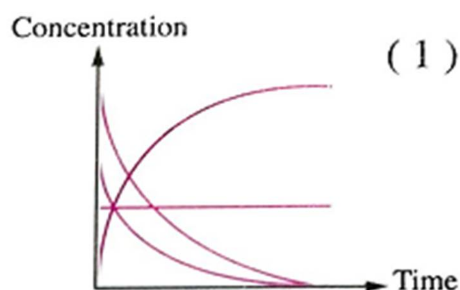
1. Volt/Ampere - Coulomb / Second - Volt. second / Coulomb - Ohm.

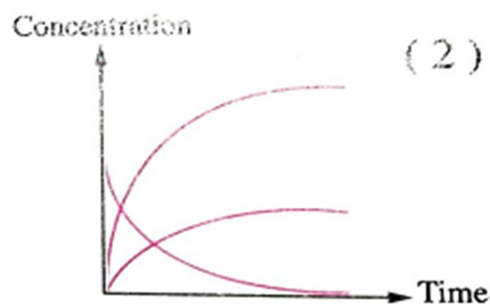
2. Dwarfism - Gigantism - Diabetes - Simple goiter.

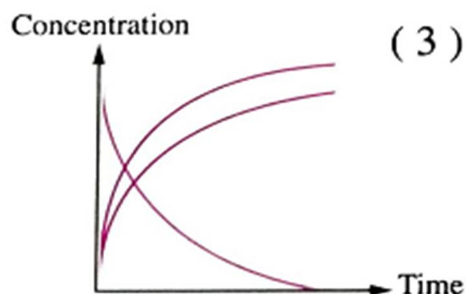
(31) A man married a woman, one of them carries curly hair (dominant trait G) and the other carries the smooth hair (recessive trait g) and they have four offspring. If the ratio between the curly hair offspring to the smooth hair offspring as the ratio 1 : 1

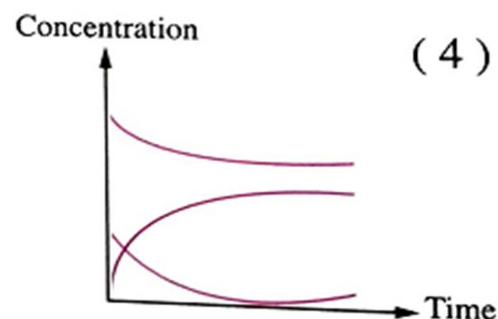
- Explain on genetic principles the genetic structure for each of the parents and the produced offspring.

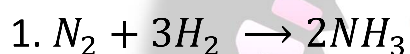
(32) Relate each of the following reactions to the figure which represents it:

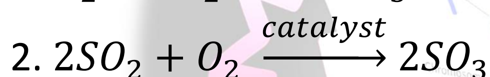




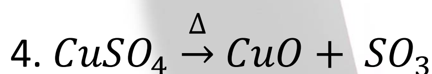




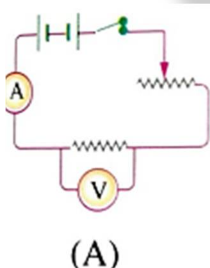

1. $N_2 + 3H_2 \longrightarrow 2NH_3$ (figure no: ……………..)


2. $2SO_2 + O_2 \xrightarrow{catalyst} 2SO_3$ (figure no: ……………..)

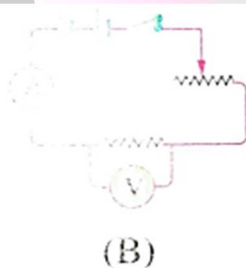

3. $2N_2O_5 \longrightarrow 4NO_2 + O_2$ (figure no: ……………..)


4. $CuSO_4 \xrightarrow{\Delta} CuO + SO_3$ (figure no: ……………..)

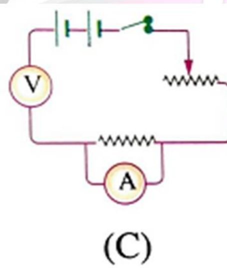
(33)



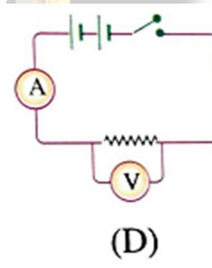
(A)



(B)



(C)



(D)

1. (a) Choose the right electric circuit which is used to verify Ohm's law practically.

(b) Write the mathematical relation of Ohm's law.

2. What happens when …?

The flow of negative electric charges (electrons) in a metal wire and in only one direction.

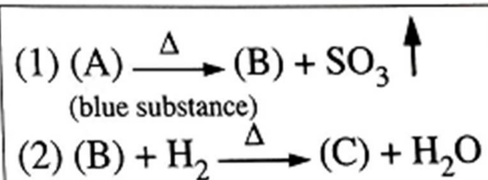
(34) Write one result for the occurrence of each:

1. The decrease in the secretion of thyroxin hormone due to the shortage of iodine in the food.
2. Adding an amount of sodium chloride (table salt) solution to silver nitrate.
3. Disability of the cells to consume glucose as a result of shortage of insulin hormone secretion.
4. Adding an amount of diluted hydrochloric acid to a cube of iron instead of iron fillings have the same mass.

---

(35) Study the following two equations and then answer:

1. Write the chemical formula for both (A, B, C) in order.
2. What is the process that occurs for the substance (B) in the reaction number (2) to produce substance (C),



---

(36) Study the following figures and then answer the questions below for each one



1. What is the structure (C)?
2. What is its function?
3. What is the structure that in the figure.
4. What is its importance?

---

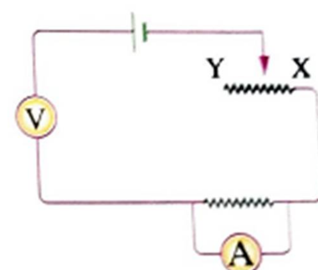
(37) An electric current of 0.5 Ampere passes in an electric lamp and the potential difference between its two ends is 12 Volt .

Calculate the work done required to lighten the lamp for 5 minutes.

---

(38) Transfer the corresponding drawing on your answer sheet after correcting any errors in it.

In which direction (X or Y) the rheostat slider must be moved to decrease the reading of both devices? And why?



(39) What changes occur when a piece of magnesium is placed in a beaker with a blue solution of copper sulphate.

Explain your answer? And write the balanced symbolic equation?

(40) If an electric current of 2 ampere passes through a conductor resistance equals 100 ohm,

Calculate the work done to pass an electric charge equals 10 coulomb across the two ends of the conductor.

(41) You have three similar cells, the electromotive force of each is 1.5 volt. Explain by drawing how can you get:

1. A battery of e.m.f. (1.5 volt) 2. A battery of e.m.f. (4.5 volt)

(42) Show by balanced symbolic chemical equations how you can obtain:

1. Copper from copper sulphate solution.
2. Mercury from red mercuric oxide.

(43) You have four electric cells, the electromotive force of each is 2 volt. show by drawing only, How can connect them to obtain a battery of an electromotive force of 4 volt. (with three different ways).

(44) Illustrate by balanced chemical equation:

1. Passing the hydrogen gas through hot copper oxide.
2. The reaction between hydrochloric acid with sodium carbonate.

(45) Problem:

Calculate the potential difference two terminals of conductor with electric current intensity 5 ampere in time 10 seconds. If the work was 200 joule.

(46) A battery consists of three electric cells, the e.m.f. for each is (1.5 volt). Illustrate by drawing how to get:

1. 4.5 volt 2. 1.5 volt

(47) If you know that:

In the human, the trait of free war lobe (12) dominates over the trait of attached ear lobe (e) trait. What will be the result of merringe of a man and a woman both are hybrid. Show this case on genetic bases.

model answer

(1) Complete the following statements:

1- acquired.
2- parallel connection.
3- pituitary.
4- faster.
5- blood.
6- 4.5
7- dwarfism.
8- rheostat.
9- manganese dioxide – sweet potato.
10. dominant.
11. Ammeter
12. The speed of chemical reaction.
13. Concurrent.
14. protein.
15. Curly or black
16. alternating – direct.
17. 2NaCl – CO_2
18. Sievert – joule.
19. Thyroxin – simple goiter.
20. hydrogen – oxygen.
21. Sodium – chlorine.
22. glucagon.
23. Diabetes – insulin.
24. protein.
25. Potential difference.
26. recessive.
27. Uranium.
28. silicon sheets.
29. Joule.
30. genes.
31. Acquired traits.
32. direct.
33. thyroxin.
34. a precipitate.
35. Black

---

(2) Correct the underlined words:

1- hydrogen.
2- the sum.
3- positive.
4- pure.
5- Copper oxide.
6- rryy.
7- decreasing.
8- dominant.
9- independent assortment of hereditary factors.
10- variable.
11- iron rust.
12- equal to.
13- Simple goiter.
14- $AgNO_3$.
15- Progesterone.
16- Copper oxide and water vapour.
17- the metal oxide.
18- seven.
19- two.
20- law of segregation of factors.
21- independent assortment of hereditary factors.
22- Red.
23- electric resistance.

24- glucagon.
25- sulphur trioxide gas.
26- direct.
27- 2HCl
28- three.
29- stamens.
30- ions.
31- gene.
32- increasing.
33- copper oxide.
34- one ohm.
35- negative catalyst.
36- bone marrow.
37- glucagon.
38- joule.
39- blood.
40- neutrons.
41- kinetic.
42- natural.
43- metal oxide.
44- nucleus.

(3) Write the scientific term of each of the following sentences:

1- The speed of chemical reaction.
2- The electric resistance.
3- Endocrine glands.
4- Electric potential of a conductor.
5- The electromotive force.
6- The speed of chemical reaction.
7- Radioactive elements.
8- Simple substitution reactions.
9- Oxidation process.
10- Acquired traits.
11- Catalyst.
12- Hormones.
13- Positive hydrogen ions.
14- Parallel connection.
15- Blood.
16- Electrochemical cells.
17- Voltmeter.
18- Recessive trait.
19- The principle of complete dominance.
20- Artificial radioactivity.
21- The electromotive force.
22- Hybrid individual.
23- Catalyst.
24- Acquired traits.
25- Work.
26-Hybrid individual.
27- The electric current.
28- Acquired trait.
29- Endocrine glands.
30- The electric current.
31- Hormone.
32- The electric resistance.
33- Hormone.
34- Reduction process.
35- Simple goiter.
36- Covalent compounds.
37- Recessive trait.
38- Electrochemical cells.
39- Enzyme.
40- Natural radioactivity.
41- Chemical activity series.
42- The coulomb.
43- Dominant trait.
44- Genes.

(4) Choose the correct answer:

1. d	2. a	3. C	4. b
5. a	6. c	7. d	8. d
9. b	10. c	11. c	12. d
13. b	14. c	15. a	16. d
17. c	18. b	19. a	20. d
21. c	22. b	23. d	24. c
25. a	26. a	27. d	28. b
29. b	30. c	31. b	32. c
33. d	34. b	35. a	36. c
37- a	38- d	39- c	40- b
41- d	42- b	43- d	44- d

---

(5) In the opposite circuit:

(A)

$\because V = R \times I = 4 \times 3 = 12\ volt$

$\therefore The\ value\ of\ (X) and\ (Y) = 12 - 2 = 10\ volt$

$\therefore The\ value\ of\ (X) or\ (Y) = \frac{10}{2} = 5\ volt$

(B)

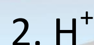
1. $\because q = I \times t = 3 \times 2 = 6\ coulomb$

$\therefore W = V \times q = 60 \times 6 = 360\ Joule$

2. $R = \frac{V}{I} = \frac{60}{3} = 20\ ohm$

(C)


1. $Al_2 O_3$


2. H^+

(D)

1- Increase the concentration of HCl.   2. MG

(E)

1. Decrease.   2. Increase.

(F)

$R = \frac{V}{I} = \frac{(8+4)}{4} = \frac{12}{4} = 3\ ohm$

(G)

1. C & D   2. A   3. B

(H)

$\because V = R \times I = 3 \times 2 = 6\ volt$

$\therefore E = 6 - 2 = 4\ volt$

(J)

1. 4 + 4 = 8 volt

2. $I = \frac{V}{R} = \frac{8}{4} = 2\ ampere$

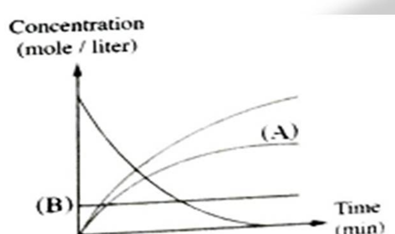
(K)

Fig.(1): - potential difference. - e.m.f of the battery.

Fig.(2): The lamp lighting increases because the current intensity increases, as it is inversely proportional to the length of wire.

(L)

(a) 1. Zero. 2. O_2

(b) 

---

(6) Study the following figures, then answer:

(A)

1. the alternative electric current.

2- the electric generator (dynamo).

3- adrenal gland.

4- adrenalin hormone.

(B)

Fig. (1):

1- 6 ohm

2- The ratio between the potential difference across the two ends of the conductor and the current intensity passing through it.

Fig. (2):

3- Rr

2- Because the red flower trait dominates over the white flower trait in pea plants, according to the principle of complete dominace.

(C)

1. CuO 2. Cu 3. CO_2

2. By passing it through clear limewater for a short time, it becomes turbid.

(7) Put (✔) or (x) in front of the following statements:

1. (x)	2. (✔)	3. (x)	4. (✔)
5. (x)	6. (x)	7. (✔)	8. (✔)
9. (✔)	10. (x)	11. (x)	12. (✔)
13. (✔)	14. (✔)	15. (x)	16. (x)
17. (x)	18. (✔)	19. (x)	20. (x)
21. (x)	22. (x)	23. (✔)	24. (x)
25. (✔)	26. (✔)	27. (✔)	28. (x)

(8) Choose from column (B) what suits it in column (A):

(A)

1. f 2. e 3. a 4. c

(B)

1. c 2. d 3. a 4. b

(C)

1. g 2. d 3. e 4. f

(D)

1. c 2. d 3. a 4. b

(9) Join from group (A) what suits in group (B):

(A)

1. b 2. a 3. d 4. c

(B)

1. c 2. d 3. a 4. b

(10) Complete the spaces in the following table:

1- Growth hormone. 2- Pituitary gland.

3- Ovaries.

4- Secret estrogen and progesterone hormones.

(11) Choose the odd word from the following:

1- Magnesium. 2- Product's volume.

3- Ohmmeter. 4- Gold.

5- Difficult to plant. 6- Skin colour.

(12) Cross out the odd word and join between the remain words:

1- Temperature of reaction, the remain words are: the factors affecting the nature of the reactants.

2- Free are lobe, the remain words are: recessive traits.

3- Simple substitution reaction, the remain words are: double substitution reactions.

4- Speaking in many languages, the remain words are: Hereditary traits.

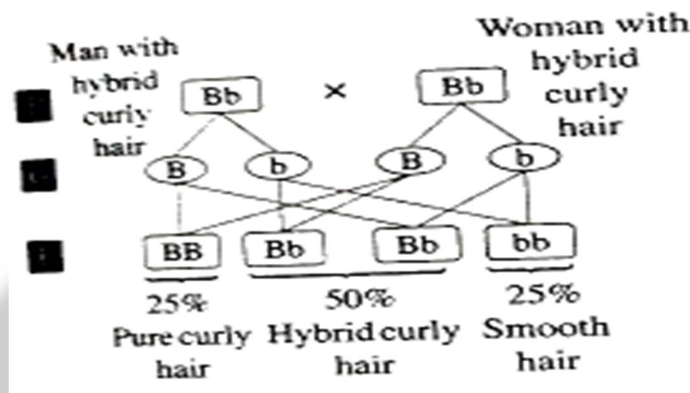
(13) Determine the odd (anomalous) word in each:

1. Aluminum. 2. Rheostat.

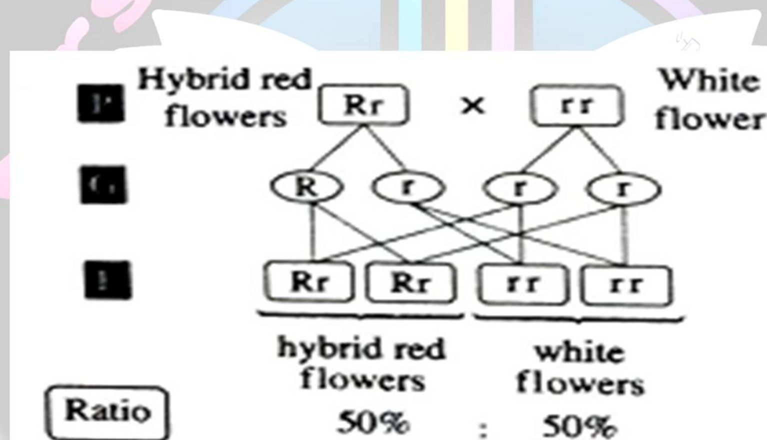
3. Adrenalin. 4. Long sightedness.

(14) Explain on genetic bases:

(A)



(B)



(C)

Because this reaction occurs by losing and gaining electrons.

(15) What are the results that related to each of the following?

1- No electric current will pass through them.

2- This cause disease symptoms which is know as hormone disorder.

3- An ignition occurs accompanied a strong pop sound



$$2Na + 2H_2O \rightarrow 2NaOH + H_2 \uparrow + heat$$

4- The reaction which results in a protein showing a specific hereditary trait will not occur.

5- The speed of chemical reaction increases.

6- They produce a generation carries the hybrid dominant trait only.

(16) To who these works related?

1- Gregor Mendel.
2- Ohm.
3- Henri Becquerel.
4- Badel and Tatum.

(17) If the work done to transfer a charge of 200 coulomb between two points is 22000 joules.

$$V = \frac{w}{q} = \frac{22000}{200} = 110\ volt$$

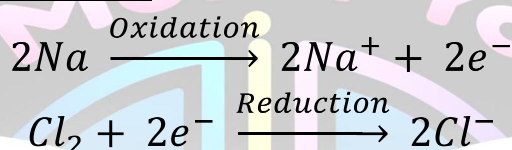
(18) Choose the correct answer from brackets and put it in the suitable place in each statement of the following:

1. Ali Mostafa Moshrafa.
2. Genes.

(19) Put the suitable word in the missing parts in the following sentences:

1- natural. 2- oxygen. 3- ammeter. 4- oxidizing agen.

(20) In the following reaction:



$$2Na \xrightarrow{Oxidation} 2Na^{+} + 2e^{-}$$

$$Cl_2 + 2e^{-} \xrightarrow{Reduction} 2Cl^{-}$$

(21) Compare between each of the following:

1- - The direct current: it cannot be transferred for long distances.
- The alternating current: it can be transferred for long distances.

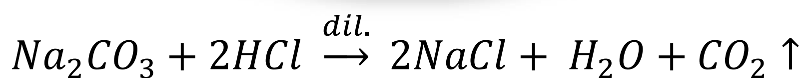
2- - Mendel's first law: named law of segregation of factors.
- Mendel's second law: named law of independent assortment of hereditary factors.

(22) What is meant by? ...

1- This means that the potential difference across the two poles of this conductor equals $\frac{64}{8}$ = 8 volt.

(23) Show by balanced symbolic equations the following reactions:

1. Diluted hydrochloric acid with sodium carbonate.



$$Na_2CO_3 + 2HCl \xrightarrow{dil.} 2NaCl + H_2O + CO_2 \uparrow$$

2. Sodium element with water.



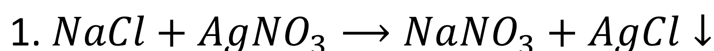
$$2Na + 2H_2O \rightarrow 2NaOH + H_2 \uparrow + heat$$

(24) What is the result of ... ?

1- The speed of chemical reaction increases.

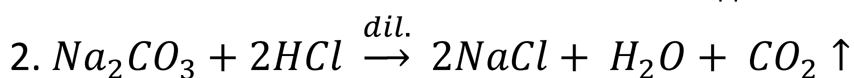
2- No electric current will pass through them because there is no potential difference between them.

(25) In front of you in the school lab the following substance:



1. $NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl \downarrow$

White ppt.



2. $Na_2CO_3 + 2HCl \xrightarrow{dil.} 2NaCl + H_2O + CO_2 \uparrow$

(26) What is the function for each of the following ... ?

1- It is used for measuring:

a. The potential difference across two ends of a conductor.

b. The electromotive force of the battery.

2- It changes the kinetic energy into electric energy.

- It produces alternating current.

(27)

1- Dwarfism. 2- Exophthalmic goiter.

(28)

1- It is used to control the current intensity and potential difference in the electric circuit.

2- They are necessary to bind the nuclear components together, to overcome the repulsion forces that are present between the positively charged protons.

(29) Calculate:

(A)

$\because I = \frac{V}{R} = \frac{220}{2200} = 0.1\ ampere$

$\therefore q = I \times t = 0.1 \times 120 = 12\ coulomb$

(B)

$\because q = I \times t = 5 \times 2 = 10\ coulomb$

$\therefore V = \frac{w}{q} = \frac{200}{10} = 20\ volt$

(C)

$\because V = R \times I = 10 \times 2 = 20\ volt$

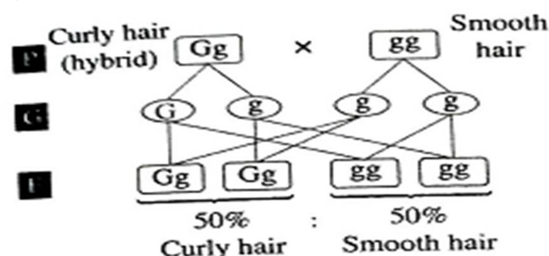
$\therefore W = v \times q = 20 \times 40 = 800\ Joule$

(30)

1- Coulomb / Second, the rest words are: units of measuring resistance.

2- Gigantism, the rest words are: Diseases resulting from the decrease in the secretion of some hormones.

(31)



---

(32) Relate each of the following reactions to the figure which represents it:

1. (4) 2. (1) 3. (2) 4. (3)

---

(33)

1. (a) B (b) $R = \frac{V}{I}$

2. The direct electric current will pass through the wire.

---

(34) Write one result for the occurrence of each:

1. The human suffers from simple goiter.

2. A white precipitate of silver chloride is formed



$NaCl + AgNO_3 \longrightarrow NaNO_3 + AgCl \downarrow$

3. The human will suffer from diabetes disease.

4. The speed of chemical reaction decreases.

---

(35) Study the following two equations and then answer:

1. (A) $CuSO_4$ (B) CuO (C) Cu

2. Reduction process.

---

(36) Study the following figures and then answer the questions below for each one

1. Adrenal gland.

2. It secretes adrenalin hormone which stimulates body's organs to respond to emergencies.

3. Variable resistance (rheostat).

4. It is used to control the current intensity and potential difference in the electric circuit.

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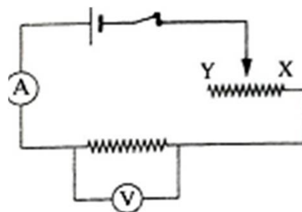
(37) An electric current of 0.5 Ampere passes in an electric lamp and the potential difference between its two ends is 12 Volt .

$\because q = I \times t = 0.5 \times (5 \times 60) = 150\ coulomb$

$\therefore W = v \times q = 12 \times 150 = 1800\ Joule$

---

(38)



The rheostat slider must be moved toward (Y) to decrease the reading of both devices (A) & (V).

As the resistance increases by increasing the length of metallic wire coil. Thus the value of I & V decreases.

(39)

The blue colour of copper sulphate disappears and a red precipitate of copper is formed.



$$Mg + CuSO_4 \rightarrow MgSO_4 + Cu\downarrow$$

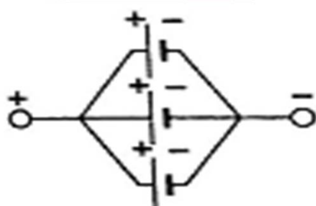
(40)

$\because V = R \times I = 100 \times 2 = 200\ volt$

$\therefore W = V \times q = 200 \times 10 = 2000\ Joule$

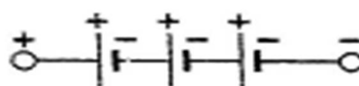
(41)

1.



1.5 volt

2.



4.5 volt

(42)

1. Adding magnesium ribbon to copper sulphate solution



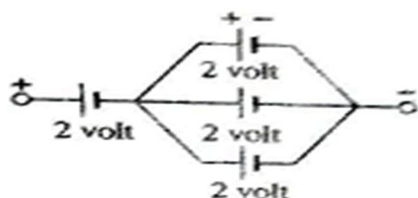
$$Mg + CuSo_4 \rightarrow MgSO_4 + Cu\downarrow$$

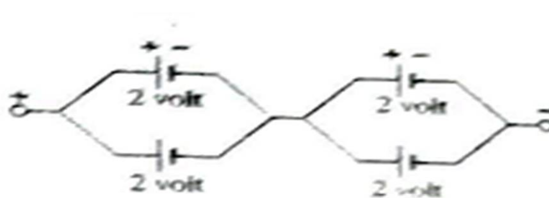
2. Heating of mercuric oxide

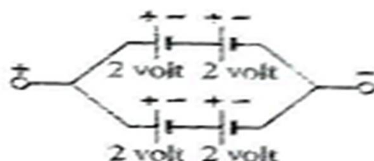


$$2HgO \xrightarrow{\Delta} 2Hg + O_2\uparrow$$

(43)

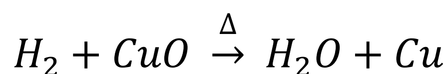






(44)

1- Hydrogen in oxidized into water, while copper oxide is reduced into copper.



$$H_2 + CuO \xrightarrow{\Delta} H_2O + Cu$$

2- An effervescence occurs due to evolving of carbon dioxide gas bubbles.



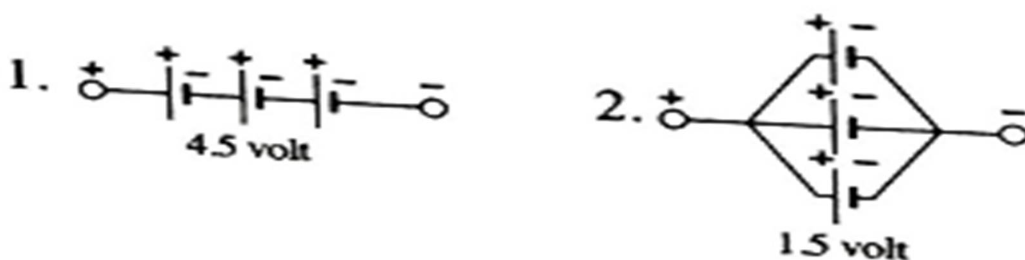
$$Na_2CO_3 \xrightarrow{dil.} 2NaCl + H_2O + CO_2 \uparrow$$

(45)

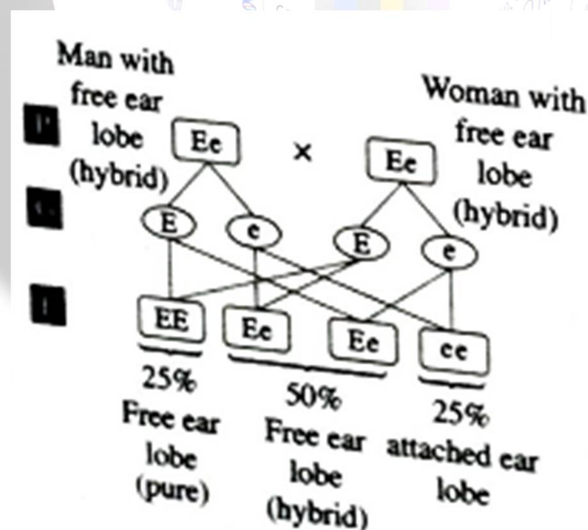
$\because q = I \ x \ t = 5 \ x \ 10 = 50 \ coulomb$

$\because V = \frac{w}{q} = \frac{200}{50} = 4 \ volt$

(46)



(47) If you know that:



كيفية طباعة صفحات معينة من ملف معين

مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

